150 US 193

RECORD, CASE No. 13,914.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1892.

TERM No., ~~283~~. 52

THE LANE AND BODLEY COMPANY, APPELLANT,

vs.

JOSEPH M. LOCKE.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF OHIO.

FILED NOVEMBER 8, 1889.

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1 At a stated term of the circuit court of the United States of America within and for the western division of the southern district of Ohio, in the sixth judicial circuit of the United States of America, begun and had in the court-rooms, at the city of Cincinnati, Ohio, in said district, on the first Tuesday of February, being also the fourth day of that month, in the year of our Lord one thousand eight hundred and eighty-nine, and of the Independence of the United States of America the one hundred and thirteenth—present, the Honorable George R. Sage, district judge—among the proceedings had were the following, to wit:

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE & BODLEY COMPANY, Defendants. } In Chancery. # 3708.

Be it remembered that heretofore, to wit, on the 26th day of November, in the year of our Lord one thousand eight hundred and eighty-four, came the complainant, Joseph M. Locke, by his solicitors, and filed in the clerk's office of said court his certain bill of
2 complaint herein, clothed in the words and figures following, to wit:

Bill of Complaint.

In the Circuit Court of the United States for the Southern District of Ohio.

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE AND BODLEY COMPANY, *Complainants.* } In Equity. # 3708.

To the honorable the judges of the circuit court of the United States for the southern district of Ohio:

Joseph M. Locke, a citizen of the United States, residing in the city of Cincinnati, State of Ohio, brings his bill against The Lane & Bodley Company, a corporation organized under and by virtue of the laws of the State of Ohio and under and by virtue of the laws of the United States, and doing business in the city of Cincinnati, State of Ohio.

And thereupon your orator complains and says:

That heretofore and before the 15th day of February, 1876, your orator, being then a citizen of the United States, was the true, original, and first inventor or discoverer of a certain new and useful invention, to wit, an improvement in three-way-balanced stop-valves, and that said invention was not known or used by others before your said orator's invention or discovery thereof, and was not for more than two years prior to the application for letters patent
3 therefor in public use or on sale, contrary to the provisions of the statutes of the United States in such cases made and provided.

That your orator made application in writing to the Commissioner of Patents of the United States for the granting of letters patent for said invention and paid into the Treasury of the United States the fees required by law.

And *there* also duly complied in all respects with all the necessary conditions and requirements of the statutes of the United States in such case made and provided prior to the granting of letters patent hereinafter mentioned.

That on the 15th day of February, 1876, letters patent of the United States bearing date on that day were issued to your orator according to law, whereby there was granted to him, his heirs, executors, administrators, or assigns, for the term of 17 years from the 15th day of Feb., 1876, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the invention or discovery aforesaid, a description whereof was given in the words of your orator in the schedule annexed to said letters patent and was made part of the same.

That the said letters patent were issued in the name of the United States of America and were signed by the Secretary of the Interior and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents, and were = 173,653 and were issued and delivered to your orator.

That thereupon, after the issuing of the letters patent as
4 aforesaid, your orator put the said invention in use; and your orator prays that the said letters patent and the schedule annexed thereto as aforesaid may be deemed and taken as a part of this bill, and to the originals of said letters patent and schedule or duly authenticated copy thereof, now in your orator's possession and ready to be produced, he craves leave to refer.

And your orator further shows unto your honors that the said invention or discovery so patented as aforesaid unto your orator is of very great utility, and that the same was extensively introduced into public use and has ever since been extensively and publicly used, and that prior to the 1st day of December, 1876, the public generally acquiesced in the exclusive rights of your orator to said invention or discovery described and claimed in the letters patent belonging to him prior to the said 1st day of Dec., 1876, as hereinbefore set forth, and ever since said last-mentioned date has generally acquiesced in your orator's right to the same, and your orator, prior to and since said date, would, but for the wrongful acts of the said defendants and others acting in concert with it, have made large gains, profits, and advantages from the manufacture, use, and sale of the said invention, and your orator would, but for the wrongful acts and doings of the said defendants and others acting in concert with it, now be enabled to use the said improvement in the three-way-balanced stop-valves, to which he is entitled to the exclusive right as aforesaid, with profit and advantage, but that by the said wrongful acts and doings he is now prevented and hindered from doing.

5 And your orator further shows unto your honors upon information and belief that the said defendant, The Lane and

Bodley Company, well knowing the premises and the rights and privileges secured unto your orator, in order to deprive him of the profits, benefits, and advantages which might and otherwise would have accrued to him, at Cincinnati and elsewhere, and within said southern district of Ohio and elsewhere, and without license and permission of your orator, has ever since the first day of December, 1876, unlawfully and wrongfully used or caused to be used certain three-way-balanced stop-valves and contrivances, each and all containing said invention, discovery, improvement, and combination, the exclusive right to which is secured to your orator as hereinbefore set forth, and which said unlawful use by the defendant aforesaid is a violation and infringement of your orator's exclusive rights and privileges; and the said defendant has derived and received and is still deriving and receiving from such use great gains, profits, and advantages, but to what amount your orator is ignorant and cannot set forth, but your orator prays that the defendants may be required to make a disclosure of all such gains, profits, and advantages.

And your orator in like manner avers that the defendant, though requested to desist from such unlawful use and to pay to your orator such gains and profits as the defendant has actually made, refuses so to do; by means whereof your orator is and has been greatly injured, and is now prevented from putting the said invention or discovery into successful operation, and has been and is deprived
6 and prevented from receiving the gains and profits to which he is legally entitled from the exclusive rights and privileges so granted and secured to him as aforesaid, and which he would have derived and acquired and would now derive and acquire but for said wrongful acts of said defendants.

And your orator prays that the said defendant may be compelled by a decree of this honorable court to account for and pay over unto your orator all such gains and profits as have accrued or arisen to or been earned or received by the said defendant, and all such gains and profits as your orator would have received but for the wrongful acts and doings of the said defendants and all damages your orator has sustained thereby; and this honorable court will assess the same or cause them to be assessed under its direction and will increase the same in its discretion, as provided by law.

And that the said defendant, its officers, associates, attorneys, solicitors, clerks, servants, agents, and workmen, may be perpetually enjoined and restrained by the decree of this court from directly or indirectly making or causing to be made, using or causing to be used, or vending to others to be used in any manner any valves or contrivances containing or embodying said invention granted by said letters patent as issued aforesaid, and from infringing upon or violating the said letters patent as issued aforesaid, and from infringing upon or violating the said letters patent by the use or sale of the said invention in any way whatsoever.

7 And that the said defendant may be decreed to pay the costs, charges, and disbursements of this suit, and your orator

may have such other relief as the equity of the case may require and as to your honors may seem meet.

To the end, therefore, that the said defendant may, if it can, show why your orator should not have the relief prayed and may full, true, direct, and perfect answers make, according to the best of it or its officers', clerks', agents', or workmen's knowledge, remembrance, information, and belief, to the several matters hereinbefore averred and set forth as fully and particularly as if the same where here repeated paragraph by paragraph and it and they were thereto severally and specifically interrogated—

May it please your honors to grant to your orator a writ of *subpœna ad respondendum*, issuing out of and under the seal of this honorable court, directed to the said defendant, commanding it to be and appear and make answer unto this bill of complaint, and to perform and abide by such order and decree herein as to this court may seem required by the principals *and* equity and good conscience.

May it also please your honors to grant your orator a provisional or preliminary injunction, issuing out of and under the seal of this honorable court, enjoining and restraining the defendant and its officers and attorneys, solicitors, clerks, servants, workmen, and agents to the same purport, tenor, and effect hereinbefore prayed for in regard to said perpetual injunction.

8 And your orator will ever pray, &c.

JOSEPH M. LOCKE,
By LOGAN AND SLATTERY,
His Attorneys.

THOMAS A. LOGAN, *Of Counsel.*

UNITED STATES OF AMERICA, }
Southern District of Ohio, } ss:

Joseph M. Lock, being duly sworn, deposes and says that he is the complainant in the foregoing bill of complaint; that he has read the same and knows the contents thereof; that the said bill is true except as to any matters therein stated upon information and belief, and as to these matters he believes it to be true.

JOSEPH M. LOCKE.

Subscribed in my presence and sworn to before me this 26th day of Nov., 1884.

J. E. STEVENSON, [SEAL.]
Notary Public, Hamilton County, Ohio.

And afterwards, to wit, on the 26th day of November, A. D. 1884, there was issued out of the clerk's office of said court our certain subpœna, directed to the marshal of said district and against the defendants herein; said subpœna is in the words and figures following, to wit:

Subpœna in Chancery.

9 THE UNITED STATES OF AMERICA, } ss:
Southern District of Ohio, }

The President of the United States of America to the marshal of the southern district of Ohio, Greeting:

You are hereby commanded to summon the Lane & Bodley Company, a corporation, citizen of and resident in the State of Ohio, if it be found in your district, to be and appear in the circuit court of the United States for the southern district of Ohio aforesaid, at Cincinnati, on the first Monday in February next, to answer a certain bill in chancery filed and exhibited in said court against it by Joseph M. Locke, citizen of and resident in the State of Ohio.

Hereof you are not to fail under the penalty of the law thence ensuing.

And have you then and there this writ.

[SEAL.] Witness the Honorable Morrison R. Waite, Chief Justice of the United States, this 26th of November, A. D. 1884, and in the 109th year of the Independence of the United States of America.

Attest: WM. C. HOWARD, *Clerk.*

Memorandum.

The said defendant is required to enter its appearance in
10 this suit in the clerk's office of said court on or before the first Monday of January, 1884; otherwise the said bill may be taken *pro confesso.*

WM. C. HOWARD, *Clerk.*

(Endorsed thereon:) $50.00 deposited as security for all costs for which the plaintiff may be liable in this suit.

And afterwards, to wit, on the 29th day of Nov., A. D. 1884, came the marshal to whom the aforesaid subpœna was in form directed and filed in the clerk's office of said court the above subpœna, with his proceedings thereon endorsed, in the words and figures following, to wit:

Marshal's Return.

Rec'd this writ at Cincinnati, O., Nov. 26, 1884, and served the same in Cincinnati, O., as follows: On the within-named The Lane & Bodley Company, by delivering a true copy hereof to P. P. Lane, president, and C. F. Thompson, secr'y, of said company, each personally, Nov. 29, 1884, at 3.15 p. m.

LOT WRIGHT, *U. S. M.,*
By C. E. TWIFORD, *Deputy.*

2 services	$4 00
2 copies	1 00
2 miles	12
	$5 12

11 And afterwards, to wit, on the 29th day of November, A. D. 1884, the following appearance was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Appearance.

R. M. Hosea, civil & mechanical engineer, consulting expert. Law office of L. M. Hosea, Johnston building, 5th & Walnut.

Patent law a specialty.

CINCINNATI, *Nov.* 29, 1884.

Clerk U. S. courts, Cin'ti.

DEAR SIR: Please enter my name as counsel for the Land & Bodley Company, associated with Messrs. McDougall & Longworth, *In re* Jos. M. Locke *vs.* L. & B. Co., cir. c't, # 3708, and send copy of bill.

Yours very truly, L. M. HOSEA.

And afterwards, to wit, on the 24th day of January, A. D. 1884, the following answer was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Answer.

12 In the Circuit Court of the United States, Southern District of Ohio.

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE & BODLEY CO., Defendant. } In Equity. #3708.

To the honorable the judges, &c.:

The defendant, for answer to the bill of complaint, answering, says:

The defendant admits that it is a corporation created and existing under and by virtue of the laws of Ohio, but denies that the complainant, Joseph M. Locke, was or is the true, original, and first inventor of the apparatus covered by the letters patent sued upon in said bill, and denies that said apparatus was an invention or patentable at the date of complainant's said application for letters patent, as alleged, or that it was novel at that time; but, on the contrary, avers on information and belief that an apparatus substantially identical therewith in character was previously patented in letters patent of the United States granted to William R. Dunlap, of Cincinnati, O., assignor of half his right to Warren Warner, of same place, said letters patent being for an improvement in balanced valves dated October 29th, 1872, numbered 132,526; also in letters patent of the United States granted to James A. Vaughn, of Cuyahoga Falls, Ohio, said patent being for an improve-
13 ment in balanced valves for hydraulic Cranes, dated September 30th, 1873, numbered 143,266, and that another like ap-

paratus was previously described on pages 140, 141, and 142 of a certain printed book entitled "A Manual of the Steam-Engine and Other Prime Movers," by William John Macquorn Rankine, 5th edition, revised, published in London, England, by Charles Griffin and Company, Stationers' Hall court; which said book is and was at the date of said complainant's application for letters patent and for many years previously in general circulation in the United States and other countries, the above-stated edition having been published in the year 1870.

The defendant admits on information and belief that letters patent bearing date as alleged in said bill were issued to said complainant for an alleged improvement in three-ways-balanced stop-valves, but denies that said complainant was the true and original inventor of said improvement or of any substantial or material part thereof, as disclosed by said patent, and denies that the same had not been at the date of said application for more than two years on sale and in public use in the United States, but, on the contrary, avers that said apparatus or apparatus substantially identical therewith was well known and in public use in the United States for more than two years prior to said application, and that said use was and is known to and was by Warren Warner, of Cincinnati, Ohio; James A. Vaughn, of Cuyahoga Falls, Ohio, and to and by other persons whose names and places of residence are at present unknown
14 to defendant, but which, when ascertained, it will crave leave to add hereto by way of amendment. The defendant, further answering, says that the true facts in relation to said complainant's patent and alleged invention are as follows and not otherwise, to wit:

That the defendant's predecessors, the firm of Lane and Bodley, for a long time before and during the period hereinafter mentioned and up to the merger of said firm into the defendant corporation, and the defendant since said merger, were engaged in the construction and sale of hydraulic elevators and other machinery for various industrial purposes, and that on or about the 20th day of November, 1871, the defendant's predecessors employed the complainant, James M. Locke, as general designer and draughtsman to prepare working drawings of hydraulic elevator and other machinery, and that complainant remained so employed until about February 21st, 1874, and that during said period complainant was employed in designing, perfecting, and embodying in working drawings, under the direction of said firm of Lane and Bodley, their superintendents and officers, for the purposes of building and selling such machinery as their trade required and embodying therein such constructions, changes, or improvements as were from time to time suggested to said Locke by said firm or their officers or employés or might arise from his own mechanical or constructive skill based upon the experience and needs of said firm in their business, for which services the complainant was fully paid a liberal salary, and which said constructions and improvements were from time to time tested and carried
15 *and carried* into actual business use by and at the sole ex-

pense of said form; that the alleged improvement claimed by complainant in the letters patent sued upon was in fact designed, produced, tested, and carried into use, in the manner and under the circumstances stated, early in the year 1872, by and under the direction and at the instance of the defendant's predecessors as the result of their own experience and experiments and to meet the particular necessities disclosed by such experience, the same being done in the ordinary course of the business of said firm and said improvements being carried into public use by them with the full knowledge of and without objection on the part of the complainant or any claim by him — having produced any patentable invention or devised any improvement which could form the basis of any personal right or claim.

The defendant, further answering, says that in so far as the alleged improvement forming the subject of said letters patent differs from the apparatus described and illustrated by Prof. Rankine in the printed book before cited in construction, function, or mode of operation, and from other structures well known in the art and having a similar purpose, such changes were suggested and designed, either wholly or in essential particulars, by the members, officers, or employés of said firm of Lane and Bodley and not by the complainant, as this defendant is fully able to prove. Wherefore the defendant says that the complainant is not the lawful inventor of the improvement claimed in said letters patent, but that whatever patentable improvement is disclosed in said patent is the invention of
16 others, not the complainant, in all essential particulars, and that in applying for said letters patent and in making oath as a preliminary condition thereto, as required by law, that he, said complainant, was the sole and original inventor of said alleged improvement the complainant committed a fraud upon the Patent Office and the public, and the letters patent so obtained are wholly void.

The defendant, further answering, says that on the 22nd day of April, 1876, the firm of Lane and Bodley, theretofore consisting of P. P. Lane, E. Myers, S. R. Smith, and A. Schmier, reorganized as an incorporated company under the name of the Lane and Bodley Company, the present defendant continuing business without change of interests and merging the firm and its interest into the company thus formed, which became and has since remained the successor of the said firm as to all its rights of whatever nature, and that by reason of the premises and under the circumstances of the employment of and payment to the complainant by the defendant's predecessors as aforesaid and the complainant's acquiescence in the construction, use, and sale of the apparatus and device so patented and the expense incurred by the defendant's predecessors in said experiments, constructions, and changes that if any substantial or material part of said apparatus shall or may hereafter be considered or held to be or to have been patentable to said complainant at the date of his said application for letters patent and said patent be sustained or held valid in anywise, the defendant avers and claims
17 that it is entitled — a right to manufacture and sell said ap-

paratus and has by reason of the premises acquired a full and and indefeasible license so to do under said patent.

The defendant, further answering, denies any and all wrongful intent or act in the premises, or that it has invaded any lawful right of complainant or hindered or prevented the complainant from the enjoyment of any rights, profits, or advantages to which he is lawfully entitled, or that it has been notified or requested to desist from using said improvement and to pay over any alleged gains and profits of such use, or that by any act or refusal of the defendant the complainant has been in any way injured or prevented from putting any invention or discovery into successful and profitable use, as in said bill alleged.

All of which statements and defenses this defendant is ready to aver, maintain, and prove as this honorable court shall direct, and it prays to be hence dismissed with its costs in this behalf sustained, and for such other and further relief as the equity of the case requires.

In witness whereof the Lane and Bodley Company has hereto affixed its corporate seal and caused the same to be attested by Chas. F. Thompson, its secretary and treasurer.

[SEAL.] CHAS. F. THOMPSON,
Sec'y & Treas.

L. M. HOSEA,
Solicitor and of Counsel for D'f't.

McDOUGAL & LONGWORTH, *Of Counsel.*

18 STATE OF OHIO, }
County of Hamilton, } *ss:*

On this 24th day of January, 1885, before me personally appeared Charles F. Thompson and made oath that he has read the foregoing answer and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters which are therein stated to be on information and belief, and as those matters he believes it to be true.

W. J. JOHNS, [SEAL.]
Notary Public in and for Hamilton Co., Ohio.

And afterwards, to wit, on the 17th day of March, A. D. 1885, an entry was made upon the journal of said court, clothed in the words and figures following, to wit:

Journal W, p. 68.

Upon application to the court leave is granted the complainant to file his reply herein forthwith, and the same is filed.

And afterwards, to wit, on the 17th day of March, A. D. 1885, the following reply was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Reply.

In the Circuit Court of the U. States, Southern District of Ohio. In Equity.

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE AND BODLEY CO., Defendant. } Replication. #3708.

19 The replication of Joseph M. Locke, complainant, to the answer of The Lane and Bodley Company, defendant.

This repliant, saving and reserving unto himself now and at all times hereafter all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiences of the said answer, for replication thereunto says that he will aver, maintain, and prove his said bill of complaint to be true, certain, and sufficient in law to be answered unto, and that said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by this repliant; without this, that any matter or thing whatsoever in the said answer contained material or effectual in the law to be replied unto and not herein and hereby well and sufficiently replied unto, confessed or avoided, traversed or denied, is true.

All which matters and things this repliant is and will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly prays as in and by his said bill he has already prayed.

LOGAN & SLATTERY,
Complainant's Solicitors.

And afterwards, to wit, on the 16th day of June, A. D. 1885, the following depositions and exhibits were filed in the clerk's office of said court, clothed in the words and figures following, to wit:

20 United States Circuit Court, Southern District of Ohio.

JOSEPH M. LOCKE
vs.
THE LANE & BODLEY COMPANY. } No. 3708.

Deposition of Joseph M. Locke, taken before me, J. E. Stevenson, a notary public within and for the county of Hamilton, in the State of Ohio, pursuant to the annexed notice, and at the time and place therein specified, to be read in evidence on behalf of the plaintiff in an action now pending in the circuit court of the United States for the southern district of Ohio, in which Joseph M. Locke is complainant and The Lane & Bodley Company defendant.

Present: Thos. A. Logan, Esq., on behalf of complainant; L. M. Hosea, Esq., on behalf of defendant.

Examination-in-chief of JOSEPH M. LOCKE by T. A. LOGAN, Esq., for complainant:

JOSEPH M. LOCKE, of lawful age, being first duly cautioned and solemnly sworn, deposes and says as follows:

Question 1. State your name, age, residence, and occupation.

Answer 1. Joseph M. Locke; age, 54 years; residence, Cincinnati, and am a citizen of the State of Ohio; by occupation, a civil mining and mechanical engineer.

Q. 2. Are you the complainant in this suit?

A. 2. I am.

21 Exhibit.—Complainant now offers in evidence letters patent of the United States No. 173,653, dated February 15, 1876 (marked "Exhibit A").

Q. 3. Are you the Joseph M. Locke to whom was issued the aforesaid letters patent?

A. 3. I am that person.

Exhibit.—Complainant now offers in evidence the model marked "Complainant's Exhibit No. 1, Locke Model."

Q. 4. Please examine the model aforesaid and state whether or not it correctly illustrates the device described and shown in the aforesaid letters patent.

A. 4. It does.

Q. 5. Please describe in detail the function and mode of operation of the device described in the aforesaid letters patent, and in your answer you may illustrate the same by reference to the said model.

A. 5. In the first place, I desire to state that the said model is lettered upon the various parts to correspond with those on the drawings in said letters patent. My invention is primarily designed as a means of so controlling the supply and the discharge of the water used for impelling hydraulic lifts or elevators as to enable their upward or downward motion or stoppage at any desired level without such nice attention or manipulation as would be difficult or impossible to an ordinary operator and without such sudden arrest or resumption of the flow as would endanger the walls of the conduits. In this model, "Exhibit No. 1," P represents a supply and discharge chamber, which has on one side of it a service pipe or passage, C, that affords permanent communication with the hydraulic motor or other engine to be impelled. The said chamber P communicates at opposite ends with two co-axial pipes, Q and L, of which the pipe Q receives at one side of it the inlet passage A and has a tubular prolongation, J, which enters the chamber P. The edge of this prolongation J has one or more scollops or indentations, which narrow inwardly, as at *f*,—consti-

22 tute graduated openings. The pipe Q has two cup packings, of which the innermost one, R, is placed at the junction of the prolongation J with the lower end of the said pipe Q, the lip of the packing turning into the pipe Q, and constitutes the seat of the inlet valve, while the other packing, R′, occupies the

outermost extremity of the said pipe and encloses the balancing piston, to be presently described. The pipe L is ground out interiorly to form a true and smooth cylindrical pocket for the discharge-valve, hereafter described. The operating handle T terminates in a plunger N O F M H, which consists of a long cylindrical piston, N, called the balancing piston, whose inner end is by means of rod O connected to convex valve F, which constitutes the inlet valve proper and which is prolonged downward so as to form a cylinder, M. Said valve F and cylindrical prolongation M enter and play within the packing R, which therefore serves as the inlet valve seat. The said cylindrical prolongation M is near its lower end encircled by the packing discharge-valve S, formed of some yielding and impervious material, such as India rubber or leather, and of such dimensions as to be capable of filling the discharge-pipe L. The cylinder M is prolonged below the packing valve S and has one or more notches, *h*, that are similar in form and function to the notches *f* of the tubular prolongation J. The tubular prolongation J and the pipe L are interiorly of slightly greater diameter than the cylinder M; the distance between the valves F and S so much exceed the distance between the seats R and E as to secure a sustained or sensible duration respectively of the receiving, the closed, and the discharging condition of the apparatus, so as to render unnecessary such nice movement of the operating handle T as would become needful were the interval between the supply and discharge only momentary or of but inappreciable duration. In this arrangement the hemispherical member F constitutes, as before stated, the inlet valve, the packing constituting its seat 23 and the cylinder F M and tube, J constituting prolongations of the said valve and seat respectively. Again, *in* the ring S and the upper extremity E of the pipe L constitute respectively the outlet valve and seat, of which H and L constitute the respective prolongations; all of these prolongations are in the direction of the flow, the soft or yielding packings R and S being so arranged and secured relatively to the indented portions J and H that they can by no possibility come in contact with them; are free from liability to become torn or mutilated as they would be were they subject to attrition with said indented portions.

The operation is as follows: The apparatus being closed—in other words, F being within the packing R and S within the tube L—should it now be desired to elevate the platform the handle T is depressed until the convex portion F of the plunger by receding from its seat R through the indented prolongation J admits water to the engines very slowly at first and subsequently in greater abundance until the valve is fully open. All this time occupation of the pipe L by the packing valve S effectually closes the discharge, so as to prevent any escape of water from the engine. If, now, it be desired to bring the platform to rest it is merely necessary to reverse the movement of the handle T, so as to restore the parts to the position aforedescribed. In passing to the closed condition the indented prolongation J again becomes useful by compelling the closure to take place gradually, and thus avoid such abrupt suspension of the flow as

would create "water ram" and endanger the pipe and produce too sudden arrest of the motion of the platform. Re-entrance of the valve F to the seat R finally operates to shut off the supply, and this without opening the discharge passage L, even if the operator do not succeed in stopping the rod at the precise central position. If, on the other hand, the operator seeks to lower the platform, he has but to elevate the handle T until the valve S leaves its seat E, and subsequently the narrow inner extremities of the in-
24 dentations *h* begin to emerge from the pipe L, the water begins very gradually to escape into said pipe, and subsequently escapes more rapidly should the plunger be elevated. By this means the operator is enabled to let down a heavily loaded platform with perfect security, or a lighter one, with any desired speed, which can be checked or reversed at will without danger to the containing passages, the indented prolongations preventing any such violent or abrupt check to the inertia of the hydraulic column as would be liable to rupture the pipes, no matter how quickly the rod may be operated. The same object may be attained by an internal downward flare of the tubular projection J and the downward taper of the prolongation H as substitutes for the indentations *j* and *h*, or the purposes may be accomplished by oblique terminations of said prolongations. It is manifest that the valve F and the balance piston N, being at all times subject to equal and opposing pressures in all conditions of the apparatus, the same equality or balance of pressure taking place on the other parts of the plunger prevents any move thereof independently of the impulse imparted by the operating handle T, and renders the said plunger of easy movement or detention by means of said handle.

In describing my model I have assumed it to be in an upright position simply for the convenience of description, but its action would be similar in any other position.

Q. 6. Is the said model an operative apparatus?

A. 6. It is.

Q. 7. Please describe that which has been known heretofore in this class of devices as the "water ram," and state what effects, if any, injurious or otherwise, are produced in conduit pipes by the operation of this "water ram."

A. 7. When water is flowing through a conduit we have a mass—that is, the liquid—in motion. If this flow is suddenly arrested the mass gives a blow similar to a hammer or battering ram,
25 with the exception that, being a liquid, the impact is in every direction, thus tending to burst the pipes. This action is frequently illustrated by the bursting of water pipes some distance from the faucet when the faucet is suddenly closed, arresting the flow.

Q. 8. In your device covered by your patent what is the effect relative to the "water ram" of the graduated openings?

A. 8. The "water ram" is avoided by the gradual arresting of the current, as the brake gradually arrests the movement of a train in lieu of a sudden stoppage of motion by collision.

Q. 9. What effect has this in permitting the easy progress or stoppage of the platform or other device by the operator?

A. 9. It secures an easily accelerated and retarded motion to the platform, as before described.

Q. 10. Of what special utility in the combination of the patent is the soft or yielding packing therein described?

A. 10. If it were not for the presence of this packing there would frequently be grit and small particles of other foreign matter which is in the liquid passing through the valve, which grit and particles would soon wedge or cut out, and thus render the valves inoperative. The soft packing prevents all this, and also preserves the tightness of the parts during their natural wear and tear, which tightness is absolutely necessary, as otherwise, when leakage occurs, it is impossible to hold the platform in a fixed position.

Stipulation.—It is stipulated by counsel that all copies of patents offered in evidence in this case by either party may be uncertified Patent Office copies, and that the same shall be considered for all purposes as though they were certified.

J. E. STEVENSON,
Notary Public, Hamilton County, Ohio.

26 Adjournment.—The further taking of this deposition was at this point adjourned, by consent of counsel, until to-morrow (Wednesday) morning, June 10, 1885, at 11 o'clock a. m.

J. E. STEVENSON,
Notary Public, Hamilton County, Ohio.

WEDNESDAY, *June* 10, 1885.

The further taking of this deposition was resumed, pursuant to the above adjournment.

Examination of JOSEPH M. LOCKE continued.

Cross-examination by L. M. HOSEA, Esq.:

Cross-examination waived.

JOSEPH M. LOCKE.

Adjournment.—The further taking of this deposition was at this point adjourned, by consent of counsel, until to-morrow (Thursday), June 11, 1885, at 11 o'clock a. m.

J. E. STEVENSON,
Notary Public, Ham. Co., Ohio.

THURSDAY, *June* 11, 1885.

The further taking of testimony was resumed, pursuant to the above adjournment.

Present: T. A. Logan, Esq., for plaintiff.

Exhibit.—Complainant now offers in evidence "Illustrated Catalogue, Lane & Bodley, Hydraulic Elevators," calling particular

attention to pages 9, 10, 11, 12, 13, and 20, as marked. (Marked "Exhibit B" and hereto attached.)

J. E. STEVENSON,
Notary Public, Ham. Co., Ohio.

STATE OF OHIO, *Hamilton County,* } ss:

I, J. E. Stevenson, a notary public in and for the county
27 and State above named, duly commissioned and qualified, do hereby certify that the above-named Joseph M. Locke was by me first duly sworn to testify the truth, the whole truth, and nothing but the truth, and that the deposition by him subscribed, as above set forth, was reduced to writing by me, and was subscribed by the said witness in my presence, and that said deposition was taken at the time and place specified in the notice hereto attached, and was adjourned from day to day, as therein noted, and that I am not counsel, attorney, or relative of either party or otherwise interested in the event of this suit.

In testimony whereof I have hereunto set my hand and notarial seal this 11th day of June, 1885.

[SEAL.]

J. E. STEVENSON,
Notary Public, Hamilton County, Ohio.

28 And afterwards, to wit, on the 2nd day of February, A. D. 1886, the following amendment to answer was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Amendment to Answer.

In the Circuit Court of the United States, Southern District of Ohio.

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE AND BODLEY COMPANY, Defendants. } In Equity. #3708.

Amendment to answer of the Lane and Bodley Company to complainant's bill.

The defendants, by leave of court, amend their answer herein filed as follows: By adding the following additional paragraph on page 5 thereof, immediately before the last paragraph on said page, beginning with 6th line from the bottom:

The defendant, further answering, avers that as part of the contract of employment made by and between its predecessors, the firm of Lane and Bodley, and the complainant Locke it was understood and agreed that all improvements in the line of their manufacture which might be made by said Locke during the period of the employment of said Locke by said firm and deemed by said firm patentable should be assigned to said firm and complainant jointly, and that such agreement was in force, unrevoked, at the date
29 of said Locke's alleged invention, with the further agreement that said firm should have the right or option of the exclu-

sive title and ownership of such patents as might be taken upon such inventions by paying an agreed price therefor or a price fixed by arbitration; that during the period of said Locke's employment as aforesaid, terminating on Feb'y 21st, 1874, notwithstanding the alleged invention was in use by said firm and furnished to the public as part of its general line of manufacture with the full knowledge of complainant, the said Locke never at any time claimed or asserted that the same was patentable or called upon the firm to exercise its aforesaid right or option in any way or offered or suggested any action whatever looking to securing of any rights whatever in the same as an invention, but, on the contrary, concurred in the prevailing impression of all concerned that said device was not a legal invention on which such rights could be secured; that said Locke took no steps toward securing letters patent upon said invention during said employment nor for some time afterward, as will fully appear by reference to said patent, showing that the application therefor was filed on May 27th—more than three months after said employment had terminated; that said Locke failed to communicate his intention to apply for said letters patent or the fact of his having done so, well knowing that said firm and subsequently this defendant, as its successor, were and had been constantly engaged in manufacturing said alleged invention as an unpatentable device, and the said firm and its successor, *as an unpatentable device and the said firm and its successor* the defendant, had no knowledge of the issue or existence of said letters patent until long after its issue—more than two years subsequent to said application; and the defendant therefore claims, by reason of the premises and without admitting the validity of said patent, an equitable right in the title of said letters patent, should the court consider the same valid as such, and pleads the same in answer to the prayer of said bill.

CHAS. F. THOMPSON,
Sec'y The Lane and Bodley Co.

UNITED STATES OF AMERICA,
Southern District of Ohio, State of Ohio, Hamilton County, } ss:

On this 25th day of January, A. D. 1886, personally appeared before me Charles F. Thompson, defendant herein, who, being first duly sworn, deposes and says that he has read the foregoing amendment to answer and knows the contents thereof, and that the same is true of his own knowledge except as to the matters therein stated upon information and belief, and as to those matters he believes it to be true.

CHAS. F. THOMPSON.

Sworn to before me and subscribed in my presence this 25th day of January, A. D. 1886.

[SEAL.]

HENRY H. FAICH,
Notary Public, Hamilton Co., Ohio.

31 Complainant's counsel consents to the filing of the above, and it is stipulated that the replication now on file shall be taken to apply to this amended answer.

THOS. A. LOGAN,
For Complainants.

And afterwards, to wit, on the 19th day of May, A. D. 1886, the following depositions were filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Deposition of J. M. Locke.

32 Deposition of Joseph M. Locke, taken by W. T. Logan, a notary public in and for Hamilton county, Ohio, at the office of Thomas A. Logan, Cincinnati, Ohio, pursuant to an agreement between counsel as to time and place, taken May 7, 1886.

JOSEPH M. LOCKE, being duly sworn, deposes and says:

Q. 1. Have you examined the blotters which are offered in evidence by Mr. Thompson in sub-rebuttal testimony?

A. 1. I have.

Q. 2. Please state what those blotter- are, how they came to be used, at whose instance they were used, and for what purposes.

A. 2. They were simply paper for the purpose of scratching down anything that one might have under consideration, either in the way of drawing or designing figures or in descriptions, etc. They were used in accordance with my common and previous habit. They were used at my own instance.

Q. 3. Do you find that there has been presented in evidence all of the blotters made by you? And if any are missing, state how you know that fact.

A. 3. There is one missing that I know of. It is the one
33 that I have previously referred to as containing the original calculations of the friction of the Ludlow valve, and which I saw at the drawing-room of the Lane & Bodley Company in July, 1884. Furthermore, it is shown by a note on page 14 of Exhibit marked by Mr. Thompson as No. 17, which note reads, "See page 13, Blotter A." Furthermore, on Blotter No. 11, by Mr. Thompson, the blotter was marked by myself as No. 3, thus showing that I had made two preceding it.

Q. 4. What was the first work you did after your employment, with reference to the Bare-Shinkle elevator, and in what blotter does that appear?

(The first part of this question is objected to as having been fully answered in chief.)

A. 4. The first was in regard to calculations, friction of the Ludlow valve proposed to be used, and resistance of the puppet or globe valve, and was in the blotter that is missing.

Q. 5. What was the occasion of your examining this missing blotter in July, 1884?

(Objected to as improper in time and as irrelevant and immaterial.)

A. 5. I was looking up the data in relation to the earlier portion of my engagement with Lane & Bodley.

Q. 6. Where were these blotters kept at that time, and did Messrs. Lane and Thompson have knowledge of their existence? If yea, state how you know it.

(The same objection repeated.)

A. 6. The blotters were generally, when I was at work, lying on the drawing table, or in a drawer close at hand where I kept my drawing instruments, and were probably well known by Col. Lane, as he was in the drawing-room almost daily. Mr. Thompson's opportunity must have been limited, as he was rarely in the drawing-room, as his presence, in common with others, was discour-
34 aged by myself, as my habit has always been to exclude as far as practicable persons from my working-room.

Q. 7. State whether or not there is any chronological arrangement or order to be predicated of those blotters. If not, why not?

(Same objection repeated, and, further, that the question is leading and suggestive.)

A. 7. There is no reliance to be placed upon them with regard to their chronological order. I could not myself arrange the contents of the blotters chronologically, for in using the blotters whatever was convenient at hand was picked up and used, and in many cases drawings or sketches were superimposed upon matter already on the paper, and private matters frequently placed on the blotters, and they were used also in explaining or illustrating foreign matter—in fact, the blotters were simply "blotters" in the broadest sense of the word.

Q. 8. Do those blotters bear any such relation chronologically to the book, Exhibit No. 7½, as that by reference to the book the approximate date of sketches or markings upon the blotters could be arrived at?

(The last objection is repeated.)

A. 8. No, sir.

Q. 9. Is there any chronological order observed in the book, Exhibit No. 7½, in the sense of its being called a diary?

(Same objection.)

A. 9. No, sir.

Q. 10. Did you hear or have you read the testimony last given by Mr. Thompson, in which he makes reference to these blotters?

A. 10. I have both heard and read said testimony.

Q. 11. Please take the blotters in the order in which they
35 have been numbered by Mr. Thompson and give your statement *seriatim* as to the alleged facts and their bearings re-

ferred to by Mr. Thompson. As you proceed you may make such comments on each as will express your views in relation thereto.

(This question is objected to upon grounds previously stated; also because it is improper in form and substance, calling for matter which cannot be proper testimony in any aspect; and counsel disclaims any consent which may be inferred from his appearance here to any extension of this present examination beyond the strict and proper limits of answer to any new matter last introduced by the defense. As the question is now framed, any answer that the witness may give is objected to.)

A. 11. As previously stated, they will not admit of arrangement in chronological order for the reason then given. What is numbered 12 I should not term a blotter, as it appears to be only a loose scrap of paper, on one page of which are some sketches superimposed on matter previously drawn on the sheet, and these superimposed sketches are marked by Mr. Thompson, in red ink, "A, B, C, D," and appear as illustrations of different methods of forming regulators. In the case of A, I see nothing that suggests to my mind a dash pot, but apparently it may have been a pocket to receive the end of the rod and closing the end of the tube as a discharge port, when a discharge port be put on the side of the lower portion, as there are lines there indicating a side port for such discharge. C is a form of valve not heretofore described during the progress of these proceedings, the main features being a perforated tube and having a septum between the perforations. On page E the sketch figured of sizes is evidently not the sketch from which the Defendant's Exhibit No. 4 was made, as my practice has been to figure free-hand sketches,
36 then check off to insure correctness on such figures, and from the figures so checked make the drawing, thus insuring a proper apportioning of parts in the drawing, and consequently the figures in the sketch would correspond with the sizes of the drawing. By Exhibit 14 it will be observed that there are a number of unused pages, showing that blotters were not filled up before a new one was made. On the third page, from the back of Exhibit 14, Mr. Thompson states the sketch thereon is for the valve of dumb waiters at the Cincinnati public library. In this he is mistaken, the sketch being the one from which I prepared the model for the application of patent of the device in dispute.

Q. 12. If there are any indicia upon said last-named sketch as to sizes or other marks which will enable you to identify this last-named sketch in connection with your said application, please state what they are.

(Objected to as leading and suggestive.)

A. 12. There are no special marks or figures of the general sizes. In a practical valve the serrations would be deeper, the model or sizes given being approximately proportionate to one another, as would exist in a large valve.

Q. 13. When you went to Lane & Bodley's employ did you

find any blotters similar to these which had been made by your predecessors?

(Objected to as irrelevant.)

A. 13. I found no blotters of any kind which had been made by my predecessors.

Q. 14. Is the sketch marked "A" the foundation of any of the drawings which have been used as exhibits in this case?

(Same objection and as leading.)

A. 14. No, sir.

Q. 15. What are sketches B and D?

37 A. 15. B and D appear to be diagrams of what has been designated forms of flap valves.

Q. 16. What is C?

A. 16. C is a form of valve not heretofore described, as I have heretofore stated in my 11th answer.

Q. 17. Do the sketches on the last page of Exhibit 14 relate at all to the affairs of Lane & Bodley?

A. 17. The sketches on the upper portion of the last page of Exhibit 14 have no relation to the affairs of Lane & Bodley, being matters of my own and parts of an apparatus, which apparatus is in my possession.

Q. 18. What, in fact, is the device which is shown in a sketch on the last page of 16?

A. 18. On the bottom of the last page of Exhibit 16 is a sketch of a safety device which I made and filed a caveat for.

Q. 19. Does Exhibit 7½ show the first work done by you at Lane & Bodley's?

A. 19. No, sir; it does not.

Q. 20. Mr. Thompson has referred to the sketch of a padlock shown on page 13 of Exhibit 14, and has given his interpretation of the sketch. Please state all about it, and in that connection state whether or not it is the fact, as asserted by him, that you were in the habit of affixing the sign manual of a padlock upon many of your drawings.

(The question is objected to as improper in time and place—the matter having been inquired of — chief—and as misquoting the testimony of Mr. Thompson.)

A. 20. I do not have any remembrance of making the sketch; but from the shape of the body of the lock, and in addition to the word "balance," as referred to by Mr. Thompson, the lettering on the body of the lock and the abbreviation "Aug.," it was the sketch from which the label on Exhibit 5 and 6 of the defendant was made.

Furthermore, as the two sides of the body of the lock differ,

38 it was intended to represent two designs for the body. In regard to placing the sign manual of a padlock upon my drawings generally, Mr. Thompson is mistaken.

Q. 21. In what cases and for what purposes did you affix it?

(Objected to as irrelevant.)

A. 21. I affixed it in the cases of drawings of the balance valve in controversy as a part of the title of said drawings, as fully described heretofore in my direct testimony.

Q. 22. In Mr. Thompson's testimony he styles Book Exhibit 7½ a "record." Did you intend it to be considered as a "record" in contradistinction to a mere memorandum?

(Objected to as irrelevant and immaterial.)

A. 22. I simply regarded it as a mere memorandum.

Q. 23. Was Mr. Thompson familiar with your methods as a draughtsman while you were in the Lane & Bodley employment?

(Last objection is repeated.)

A. 23. No, sir.

Q. 24. As I understand the purport of the testimony of Messrs. Lane and Thompson regarding the blotters which they exhibit, it is that these blotters show the inception and progress of the idea which culminated in the valve in controversy. State whether or not such is the fact or whether any of these sketches, except that which was made for the purposes of your application for a patent, have any relation to the valve which you had previously conceived and embodied in the sketches which were at your house prior to your going to Lane & Bodley.

(Objected — as improper in form and substance, and as containing assumptions of fact which are directly denied and are in issue.)

39 A. 24. The sketches do not show the inception and progress as stated in the question, and I know of no other reference to the device in controversy than that of the sketch for the model.

Q. 25. Did you ever see in the drawing-room of Lane & Bodley any copy of Rankine's work in which was shown the water-engine valve before your purchase of the copy on November 2, 1872, or did you ever learn from Col. Lane or Mr. Thompson that there had been such a copy prior to that date within their knowledge?

(The first part of the question is objected — as having been fully covered in the examination-in-chief, and the last part for the same and the additional reason of its immateriality.)

A. 25. I did not.

Q. 26. You have heard the statement of those witnesses which was substantially to the effect that no part of the Bare, Shinkle & Howell elevator was at the site or in position prior to your employment. What have you to say as to that?

(Objected — as having been fully covered by the examination-in-chief.)

A. 26. I respectfully refer to my previous examination, wherein I was unable to state as to there being or not being any of the parts of the said elevator on the grounds or in place.

Q. 27. Having heard the testimony of Messrs. Lane and Thompson, you may state whether or not you desire, by reason of anything

contained therein, to modify or withdraw anything heretofore said by you.

A. 27. At this time I know of nothing that I wish to withdraw or modify in relation to my testimony heretofore given.

Q. 28. If there is any statement whatever bearing on any
40 matter or thing last testified to by those gentlemen which you desire to make, as to which I have omitted to examine you, it will be in order to state it now.

(Objected to by respondents.)

A. 28. At this time I have nothing in mind which I wish to state.

All cross-examination is by counsel for respondents waived.

JOSEPH M. LOCKE.

By consent of all parties the further taking of these depositions *were* at this point adjourned until May 14, 1886.

W. T. LOGAN,
Notary Public, Hamilton County, Ohio.

Met pursuant to adjournment.
Present: The same counsel.

W. T. LOGAN,
Notary Public, Hamilton County, Ohio.

ANTHONY SCHNIER, being produced by plaintiff, being first duly sworn, deposes as follows:

Q. 1. State your name, age, residence, and occupation.

A. 1. My name is Anthony Schnier; my age is 56 years; I live at Price's Hill; I am a machinist and a member of the firm of Smith, Myers & Schnier.

Q. 2. Are you acquainted with the parties to this suit; if so, for how long?

A. 2. I have known Col. Lane since 1858. I have known Col. Locke since about 1865. I rather think I knew him even before that.

Q. 3. State whether you were ever a member of the firm of Lane & Bodley before it became a corporation; and, if so, for how long, and who then composed the partnership?

A. 3. I became a member of that firm on January 1, 1867. I remained until it was incorporated as a stock company and remained as a stockholder until 1882. P. P. Lane, Joseph Bodley, Oli-
41 ver Britt, Samuel R. Smith, Edward Myers, and myself composed the firm while I was a member.

Q. 4. Were you a member of the firm during the time that Col. Locke was employed there as a draughtsman?

A. 4. I was.

Q. 5. Did you ever have any conversation with either of your partners as to Col. Locke's intention to apply for a patent upon his regulating valve for passenger elevators, as to his rights in the invention thereof? If so, please state why you had such conversation,

from whom you got your information, with which of your partners you talked, and all that was said and done in regard to it.

(The question is objected to as leading and suggestive in form and as irrelevant and incompetent in substance.)

A. 5. The only conversation I ever had with a member of our firm was with Col. P. P. Lane; that is, when I told him of Col. Locke informing me that he would, some day in the future, take out a patent for that valve, and would "make us boys fork over and make us pay for the use of it." That is just the way he said it—in a joking way, like he generally talked. That is all that occurred, except I remember how Col. Lane answered me, if that is material. Col. Lane told me that that did not amount to anything. It was only idle talk on the part of Col. Locke, as he (Locke) could never get out a patent for it. It's so long ago I may not remember all that occurred; but what I have stated, that much of it I remember distinctly.

Q. 6. When Col. Locke told you this, was he still in your employment?

(Same objection.)

A. 6. He was. That conversation of mine with Col. Locke took place right in our drawing-room.

Q. 7. Do you remember whether any of the partners other than Col. Lane were present when you had your conversation with Lane?

42 (Objected to as irrelevant and immaterial.)

A. 7. There was no one present but us two.

Q. 8. When did you first tell Col. Locke that you had had this conversation with Col. Lane?

(Objected to as leading and suggestive, as the witness has not intimated that he ever told Col. Locke of his conversation with Col. Lane, and it would be immaterial if he had.)

The question is withdrawn.

Q. 9. Did you ever tell Col. Locke that you had had this conversation with Col. Lane; and, if so, when?

(The objection is repeated, as the suggestiveness of the former question still remains.)

A. 9. I did; on Wednesday or Thursday last, May 5th or 6th, 1886.

Q. 10. Was that the first time you gave him the information, and under what circumstances did you give it then?

(The former objections are repeated.)

A. 10. That was the first time, and I told him in answer to his questions as to whether I remembered anything about the matter. I did not tell him before, as we never on any occasion talked about the matter.

Q. 11. Can you give us an idea of about how long it was before Locke left your employment you had this talk with Lane?

(Objected to as irrelevant and immaterial.)

A. 11. No; I could not say.

(Counsel for defendant objects to the entire deposition as irrelevant and immaterial, and declines cross-examination.)

ANTHONY SCHNIER.

43 UNITED STATES OF AMERICA, } *ss*:
State of Ohio, Hamilton Co., }

I, W. T. Logan, a notary public in and for said county and State, duly commissioned and qualified, do hereby certify that the above-named Joseph M. Locke and Anthony Schnier were by me first sworn to testify the truth, the whole truth, and nothing but the truth; that the depositions by them subscribed, as above set forth, were reduced to writing by myself and were subscribed by the said witness in my presence, and were continued from day to day, as above set forth; that said depositions were taken at the time and place above specified, pursuant to an agreement between counsel, and that I am not counsel, attorney, or relative of either party or otherwise interested in the event of this —, said deposition being taken for the reason that this is a suit for the infringement of a patent.

In testimony whereof I have hereunto set my hand and official seal this 14th day of May, 1886.

[SEAL.] W. T. LOGAN,
Notary Public, Hamilton County, Ohio.

44 Filed May 19, '86.

This deposition of JOSEPH M. LOCKE, complainant in the above cause, in rebuttal, is taken by consent of counsel, the service of notice having been waived.

Taken at the office of Logan & Slattery, No. 71 West Third street, Cincinnati, this, Thursday, February 18, 1886.

Present: Hon. T. A. Logan, attorney for complainant, and Col. L. M. Hosea, attorney for defendant.

Examination in rebuttal of Col. JOSEPH M. LOCKE by complainant's attorney, Hon T. A. LOGAN:

Q. 1. Col. Lane in his testimony has given his version of the reasons which led to your employment with Lane & Bodley. You may state the history of your employment with that firm; how it came about and what were the principal objects of it.

A. 1. In the summer of 1871 I was employed in the interest of Post and other parties of New York in making survey and plans for inclined plane to Mt. Auburn from this city. This especially drew my attention to hoisting devices and

safety arrangements in connection with the same. At the
45 same time I was employed in experiments upon cooling the cellars of the Gambrinus Stock Company, in this city. In this I was associated with Harvey Tilden, of this city, he having charge of furnishing outside supplies; during which occupation he reported he had met with Col. Lane, who informed him that the firm of Lane & Bodley were desirous of securing the services of a draughtsman, and he had suggested myself for that position and recommended me to call on them. Prior to so doing, Mr. Tilden took me to see an hydraulic hoister being constructed at that time by Messrs. Lane & Bodley, at Bare, Shinkle & Howell's, south side of Second street, between Walnut and Main, Cincinnati. I at once recognized the fact that the future outcome of that style of machinery would be large, and having about completed the work in hand I devoted considerable time, thought, and investigation to the matter. Shortly after this visit to Bare, Shinkle & Howell's I called on Col. Lane in relation to employment as draughtsman. Several interviews took place, and on one or more occasions I accompanied Col. Lane to visit the hydraulic hoister then in course of erection. During one of these visits I stated that, in my judgment, the merit and value commercially of hydraulic hoisters would rest in the perfection of the valve, or, more properly, regulator, and laid down what, in my judgment, were the requisite and desirable qualities of such a regulator. At this time—that is, during these various interviews with Col. Lane—I was working upon the solution of the problem of the construction of a regulator possessing the qualities I deemed desirable and necessary, and solved the problem as subsequently carried out in the patent under discussion. Subsequently an engagement was entered into between the firm of Lane & Bodley and myself for me to act as their draughtsman. At this time it was, I believe, understood in common that my theoretical knowledge was
46 in advance of my acquaintance with the practical operations of the machine shop, and that one of the considerations upon my part was the acquiring more knowledge of the practices in machine shops. Subsequently, or shortly after entering upon my duties, Mr. Myers, a member of the firm, came to me with the time book of the pattern shop, stating it was the practice for the draughtsman——

(Objection.—Defendant's counsel objects to any statements made by Mr. Myers.)

Witness continues his answer. Before doing so Major Hosea objects thus:

(Counsel for defendant desires to state upon the record more fully the objection, which is this: It would appear from the testimony already given that it is the purpose of the complainant to introduce testimony which should have been introduced at the outset, and is improper in rebuttal. The mode in which the case has been presented by the complainant practically results in compelling the defendant to prove a negative before the affirmative is introduced, which is obviously unjust. While I shall object in detail to all

matters which are not strictly rebuttal, I give notice that I shall, if necessary, apply to the court at the proper time for leave to answer all testimony introduced as new matter.)

(By Mr. LOGAN: The defendant's counsel is undoubtedly aware of the established rule that when taking depositions all objections to testimony must be reserved to and noted at the conclusion of the answer of the witness, and that no witness can be subjected to the embarrassment of having the thread of his testimony broken by objections occurring in the middle of a sentence. It is hoped that this rule will be observed hereafter. Any notices or motions which may hereafter be made will meet with attention as they arise; meantime the witness is requested to go on with his answer.)

47 Witness continues:

A. 1. To keep the time and oversee the pattern-makers. I declined to receive the book, telling Mr. Myers that my engagement was that of draughtsman and not time-keeper or foreman of any workmen, and referred the matter to Col. Lane, with whom all my business was to be transacted under my engagement. Col. Lane indorsed my course and reiterated what my engagement was, as draughtsman, employed eight hours per day, reporting to him only. This last clause was for common protection from conflicting orders and conflict of authority. Among the first duties in the drawing-room was the examination of plans proposed for the regulating device of the hoister then in course of construction, which device consisted in the use of globe valves or gate valves by removing the screws for moving the same and substituting levers. By calculations, still in the drawing-room of the Lane & Bodley Company up to July, 1884, I demonstrated that the great pressure in the first case and friction in the second would render them impractical.

Q. 2. You have stated that it was understood by Lane & Bodley that your theoretical was in advance of your practical knowledge. State briefly what your previous occupations have been, what your education had been, and what had been your opportunities and experience in the theory and art of mechanics.

(Objection.—Question is objected to, unless confined to the knowledge possessed by Lane & Bodley of these facts, as immaterial and irrelevant.)

A. 2. My occupation had been that of civil engineer and bridge engineer, professor of natural sciences, officer in charge of astronomical instruments and apparatus of the National observatory, in charge of experimental work of the Ordnance department of the navy; study and examination of the applied sciences in Paris,
48 London, and Berlin, charge of telegraph work in its earliest stages, consulting engineer in regard to theory and practicability of various devices, instructions in mechanical draughting; had been under the tuition of George H. Knight, of this city.

Q. 3. How far, if at all, from personal knowledge of your history or from statements made by you at any time, did Col. Lane or his firm know these facts?

(Objection.—Question is objected to as obviously impossible to answer, except by supposition and hearsay.)

A. 3. Col. Lane had told me himself that he was fully satisfied with my more than ordinary theoretical knowledge in regard to the construction, use, etc., of instruments of scientific research. As he expressed it, I was deficient of the rude makeshifts and expedients of the ordinary machine shop.

Q. 4. You may now go on and state fully, in detail, what were your duties as draughtsman, with reference only to the subject of hydraulic elevators, what you found to be the condition of things with reference to that subject when you first took charge, and what you did, step by step, in relation to the development of a regulated valve.

A. 4. My duties were to put into shape the plans as furnished me in proportioning parts and the submitting the same to Col. Lane for approval prior to their being put into the shop for execution. The first plan for valve or regulator subsequent to the before-mentioned globe and gate valve experiment was a disc valve, which I understood from Col. Lane to be one of his designing. The first step I took was to calculate the friction under conditions likely to occur at the Bare, Shinkle & Howell elevator. The results were July 18, 1884, a matter of record in the drawing-room of the Lane & Bodley Company. That satisfied me at the time of its impracticability on account of excessive friction. I further objected to the device from the ground that two discs, of which one revolved upon the
49 other, or worse, partially revolved, would grind each disc into convex form, resulting in*to* leakage of the valve. My objections were overruled and several valves made in succession with efforts to overcome defects. The defense Exhibit No. 1 is the disc valve in its latest form, excepting the addition of ridges upon the exterior case to stiffen the same. This, as was the case with the temper screws for holding the revolving disc, in the one case, on the seat to prevent leakage, and in the other screw holding it from the seat to relieve it from friction—all in practice proved a failure and was consequently abandoned. When the temper screws of this valve were adjusted to one condition the variation of back pressure, due to change of load on platform-hoister, required a change in the temper screws for their adaptation to the new condition; furthermore, the point of wear being small, a few operations of the valve wore said bearings so as to throw the valve out of adjustment.

Exhibit No. 2, called by Col. Lane a piston valve, is in fact a puppet or bonnet valve with balancing pistons. A hoister would require two such valves as shown in the drawings, one for discharge and the other for supply. The seat of the valve is at the center and cushioned with leather or other yielding substance. Valves were made of this pattern, tried without being attached to a hoister, but not adopted. Although fulfilling what was expected of them, they were deficient in coming to a solid seat, requiring the latitude of movement necessary in such valves to be provided for in the mechanism for moving the same.

Exhibit No. 3, marked "hydraulic hoister valve gear," is a portion of the gear for moving valve constructed in accordance with Exhibit No. 2. In addition to the drawing exhibited there was a complex cam—sliding cam—for communicating to the levers of the valve gear the peculiar intermittent movement necessary that the valves should have their proper action.

50 The next valve of which drawings were prepared was a piston valve, consisting of a cylinder surrounded by two water channels, from which there were openings into the main cylinder. Between these two circular water channels was an opening which was put in connection with the cylinder of the hoister. One of the circular water channels was connected with the supply, the other with the discharge pipes. The openings in the annular passage were, when at rest, closed by pistons occupying a space in the cylinder a little greater than the length of the openings. These openings were pointed or lozenge shape at their ends. The distance between these openings—that is, the openings of one encircling channel to the other—was greater than the sum of the length of both sets of openings plus the diameter of the branch pipe leading to the hoister cylinder. A third piston was placed in the cylinder beyond the openings for supply—that is, in the portion of the end of the cylinder lying on the side of the supply openings farthest from the branch pipe. The three pistons were rigidly connected. By drawing the three pistons so as to open the communication between the supply and branch pipe, water could flow into the machine, and the action of the pressure on the faces of the two pistons first described facing each other they were balanced. By then moving the piston in the opposite direction the supply ports, on account of their lozenge-shaped ends, would gradually be closed. Then, on account of the pistons overlapping the openings, the pistons could be moved some distance—that is, equal to some of the laps—without affecting the action of the valve. By continuance of the motion the outlet would be gradually opened, allowing the water to escape from the cylinder. The back pressure during closure and discharge acting upon the same surfaces of the pistons as before mentioned retain the valve in balance. This motion of the pistons to the position of discharge allowed the supply pressure to enter be-

51 tween the supply piston and the third-mentioned piston, thus leaving the valve balanced in respect to the supply. The packing of these pistons was to be made of discs of leather in sufficient number when compressed to make the entire length of the pistons, as cup packing would be subjected to abrasion from the edge of the hexagonal-shaped openings. I objected to this form from the fact that the packing would necessarily be subjected to uneven wear on account of the lozenge-shaped openings. I know of no valve having been made from these drawings.

The unsatisfactory results of all the valves or regulators which had been used up to this time was admitted by Col. Lane, and he then expressed a desire to try a plan of valve which I had several times mentioned I had designed and had sketches at home, and at his request I brought the sketches to the drawing-room of Lane &

Bodley, they being the sketches of the valve I had designed the preceding year prior to my engagement with Messrs. Lane & Bodley. Whilst the drawings were being made from these sketches Col. Lane objected to the serrated graduating device as now employed and described in my letters patent, stating in his judgment they would be an infringement upon the "Judson governor patent." Under his directions I removed the serrated graduating device and depended upon the gradual closing or shortening of the annular space between the valve seat and the valve. This I believed would not be successful, but a drawing, Exhibit No. 4, marked "Balance three-way water valve," and dated June 6, 1872, was prepared and a valve made therefrom. It was placed in position to operate a hoister, and, as I anticipated, was unsatisfactory, producing water ram in the supply, too sudden arrest of motion for the platform, and an unsatisfactory starting to lower the same.

Another drawing was prepared, marked by defendant Exhibit No. 5, in which the serrated graduations of my original plan were restored, making it in fact a reproduction of the original
52 sketch, and identical with all the valves subsequently made, as far as I know, excepting the hand hole to the compartment from which the connection is made to the hydraulic cylinder, which hand hole is discontinued, and the lining of the prolongation of the discharge seat with brass or copper. This abandonment of said brass lining allowed the cup packing to come in contact with the iron, —, acting upon the tannic acid in the leather, has the property of hardening the leather and rotting it. The arrangement for supporting a pinion to communicate motion to a rack was not in the original sketch as made by me and from which the drawings were prepared.

Defendant's Exhibit No. 6, tracing, was made under my supervision, not for the purpose of transcript of the original drawing of August 6, 1872, but for the purpose of making valves of a different size. The original being for four-inch valves, the tracing figured for a three-inch valve. Hence the note, "This drawing not used; see drawing of August 6, 1872," which applies to pinion support, as on the three-inch valve the pinion support of the four-inch valve was employed.

The tracing was made by A. E. Watkins and erroneously dated March 20, 1872, a date preceding that of the original drawing of August 6, 1872, and so traced on the tracing, and preceding several months of the time when Mr. Watkins entered into the service of Lane & Bodley, in the drawing-room.

Q. 5. Please state in detail what were the defects, if any, in the experiments you have heretofore described—why they were not adopted; and herein you may state what are the principal requisites of a valve which is intended at this day to operate the modern hydraulic passenger elevator.

(Objection.—The latter part of the question is objected to as irrelevant.)

53 A. 5. The requisites for a valve or regulator are, first, without skill the operator at his will may open the valve with proper graduating effect, so as to secure gradually accelerated motion to the platform up to the point of its full speed; second, that he, the operator, without skill will close the valve, insuring a gradual cutting off of the supply, thus preventing water ram in the pipes, which is liable to start the joints, if not burst said pipes, and give an abrupt jolt to the platform, but when the closing is gradual the platform comes to rest by a uniformly retarded movement; third, ability to retain the platform at a state of rest at any desired position; fourth, the ability to arrest the retardation or acceleration at any point and retain the speed at about that of the time of arresting; fifth, a simplicity of motion that can readily be transmitted from the platform or any staging or story on the line of travel of the platform; sixth, a latitude in amount of motion to accomplish the foregoing operations so as not to require nicety of manipulation; seventh, durability; eighth, to admit of ready repair for the natural wear of parts; ninth, balancing of parts so as to require little force in the adjustment of the valve or regulator to the operation required of it; tenth, arrangement so that variations of pressure of the supply or back pressure, or rotation one to the other, shall not disturb the balancing of the valve.

The use of puppet or bonnet valve- without balancing piston, as first attempted, required too much force to lift them from their seat. The gate valve was too difficult to move, on account of the friction, when fully seated, and both these forms were devoid of proper graduating effect, especially the bonnet valve. The disc valve, as before stated, had excessive friction when starting from the seat; seat and valve liable to wear each convex; the adjustment by temper screws impracticable from the variation of ratio between the supply
54 and back pressure and from the variation in springing of the box holding the revolving disc by variation of back pressure and consequent variation of the temper screw attached to said box; also from wear from the small point of contact of temper screws on revolving disc. The puppet or bonnet valve with balancing piston is defective in having no latitude of movement when closed and *in* graduating device within itself and requiring complicated gearing for its proper operation, and doubt as to its being satisfactory in securing proper graduation. Piston valve with the three pistons would be liable soon to leak from the unequal wear on the discharge and supply pistons of the lozenge-ended openings. I will here state that it was proposed in this three-piston valve to dispense with the third piston and prolong the remaining two in a direction from the pipe connecting with the cylinder or the engine of the hoister, said prolongation being sufficient to keep the ports of each one closed when the other one was open. I do not know if any finished drawing was made of this form.

The cylinder valve, the first valve made from the drawings which I brought from my home, with the removal of the serrated graduations, was devoid of a proper graduating action. The foregoing are the causes of the non-adoption of the above-enumerated devices.

The valve as constructed in accordance with my original sketch of 1871 and subsequently, at the request of Col. Lane, taken to the Lane & Bodley drawing-room, gave satisfaction, as it fulfilled all the conditions aforementioned as requisite.

Q. 6. In addition to the fact stated by Col. Lane in his testimony, that the disc valve used by him was interfered with in its operations by mud and gritty water, state whether or not all such disc valves are not practically inoperative by reason of the springing of the disc valve.

(Objection.—Objected to as leading and suggestive and, in its present form, irrelevant.)

55 Adjournment.

The further taking of this deposition was at this point adjourned until to-morrow, Friday, February 19, 1886, at 10.30 a. m.

(Signed) J. E. STEVENSON,
Notary Public.

FRIDAY, *February* 19 1886.

Further taking of this deposition resumed pursuant to the above adjournment.

J. E. STEVENSON,
Notary Public.

A. 6. Yes, sir; all those heretofore made, so far as I know.

Q. 7. You have read the evidence of Col. Lane, in which he denies that you are the inventor of the device shown in your letters patent and denies that the same has any patentable novelty. You may state in detail the history of your invention, its conception and progress, and state fully what part Col. Lane, or any other person than yourself, had in the invention of it, and in doing this you are at liberty to refer to any or all of the models, patents, and other exhibits in this case.

A. 7. In the fore part of the examination of yesterday I enumerated the circumstances which drew my attention to hoisting machinery, safety devices therefor, and especially to hydraulic elevators, realizing at the time that such elevators would rapidly grow in demand and that their improvement opened a good field for a future business. I recognized at once that the valve or regulator was the essential part of such machines, or, to quote Weisbach when speaking of water-pressure engines, "the regulator is, as it were, the soul of a water-pressure engine." (Authorized translation: A manual of mechanics of engineering and other construction of machines, by Dr. Phil. Julius Weisbach, vol. II, pp. 551, paragraph 302.)

56 I then determined in my mind what were the essential and desirable requisites for such a valve or regulator for a water-pressure engine to be used to propel and control the movement of an elevator. Having settled these points in my mind, I proceeded to devise a valve or regulator that would fulfill the required conditions and devised the one for which I subsequently obtained letters patent, being the one now under discussion.

This all preceded my engagement as draughtsman with the firm of Lane & Bodley; also previous to this engagement I had spoken to Col. Lane about the value of a proper regulator and qualities which it should possess. Subsequent to the engagement I had, upon more than one occasion, told Col. Lane I had a design or plan for a valve which, in my judgment, would fulfill all the required conditions. About this time experiments were being made under direction of Col. Lane with a disc valve, to which he was evidently very partial. This disc valve was very successful in regard to graduating effect, but was difficult to open, or rather move the amount of lap to allow the water to commence passing through it. After the opening was commenced the pressure would be relieved and further movement was readily made. When closing the valve the graduating effect was satisfactory, but as it approached closing excessive friction developed itself. Efforts were made to overcome this trouble by temper screws—one to relieve the revolving disc from this excessive pressure upon the seat, the other counteracting the same—but as a back pressure was constantly varying in accordance with the weight upon the platform of the hoister, which weight would be a variable quantity, as it constituted the load to be handled, this variation of back pressure would have required a variation and adjustment of the temper screw. Furthermore, this variation of back pressure would spring the box of the valve, and, as the temper screws were attached thereto, would consequently throw them out of adjustment. The irregular grinding and wearing before
57 described was a serious objection, as no packing could be used for taking up said wear. I have also previously stated that a bonnet valve had been used unsuccessfully. One was then designed—that is, a bonnet or puppet valve—with balancing pistons, a drawing of which is shown in Exhibit No. 2 of the defendant, and designated as "a sketch of a piston valve largely embodying the features of the Rankine valve." Its defective features have been previously spoken of, and it is not necessary to repeat.

Another plan, previously described, the same being a piston valve, was drawn out, but none was constructed. All of the valves having been unsatisfactory in their action, Col. Lane requested me to bring my sketches of valve, and when brought determined to try the same in practical use. The alterations from and restorations to original plan have already been given. The invention was entirely my own, without assistance or suggestion from any one.

Q. 8. You are referred to the work by Rankine, and the devices therein shown. Please state what is really the device shown in that book, at pages 140, 141, 142, and if it contemplates a valve to be used on a hydraulic passenger elevator. If not, state the reasons for your opinion, quoting any part of the book which you may desire.

(Objection.—The question is objected to, so far as relates to what use was contemplated, as immaterial.)

A. 8. The pages referred to embrace paragraph 132, being a subdivision of section 5, commencing page 138, and designated section

5 of self-acting water-pressure engines. The peculiarity of this device, in common with other single-acting water-pressure engines for pumping, — that the main regulator or valve is operated by an auxiliary engine, which auxiliary engine is controlled, so far as starting and stopping and changing direction, by a small auxiliary valve. The speed with which the auxiliary engine moves, and consequently main regulator, is controlled by stop-cocks in the
58 supply and discharge pipes respectively of the auxiliary valve, thus regulating the gradual opening and closing of the main valve or regulator independent of any graduating action in said auxiliary valve—in fact, no graduating device exists in said auxiliary valve. The author states that, page 143, "the frequency of the strokes of the engine depends on the speed with which the valve mechanism works, and this can be controlled by means of the regulating cocks on H and M, the supply and discharge pipes of the auxiliary engine." This is readily understood from the text and illustrations therein on said pages 140, 141, and 142, from which it is clearly evident that the piston F is not a balancing piston to E, but the piston of a water engine to move said piston E. The gradual opening and closing of this main valve being dependent upon the movement of said engine piston F, the speed of the movement of which piston F not being isochronous with that of the auxiliary valve, but is governed by the flow of the water into and out of the space *g*, which is controlled by the cocks in the pipes M and H, were these cocks closed there would be no movement of the piston E in the main valve or regulator, the relative opening or closing speed of the piston E being governed by the relative opening of the cock in pipes H and M. This device does not provide for the arrest of the plunger E at any point at the will of the operator. It is not designed to bring the main engine at rest at any desired point by an operator; consequently tightness of valve is not required, the action of the valve being simply to produce a continuous reciprocating motion in the main cylinder B with the necessary retardation and acceleration incidental to the change of stroke. That the piston F is not a balance piston to E is shown by the method resorted to, gradually bring the piston E to a point of rest in its down stroke, said device being a dash-pot, shown in the engraving and in the model prepared from the same engraving. The gradu-
59 ation of the upward stroke—that is, the gradual retardation—is accomplished by the piston F gradually contracting the port from the water space *g* to which the auxiliary valve is attached. From the foregoing it is evident the valve is not calculated as a regulator to a hydraulic hoist.

Q. 9. Please state generally how far, if at all, the valves described by Rankine or in any other similar work are applicable to a hydraulic passenger elevator.

(Objection.—Question is objected to as irrelevant and immaterial.)

A. 9. I am not aware of any valve that answers the purpose and fulfills all the conditions, other than my own, the English practice of slide-valve for such purpose, moved by a screw, as described in

sub-paragraphs 5 and 6, and paragraph 130, page 135, in the work of Rankine previously referred to, being too slow for the public demands of this country. In these slide-valves, as used extensively by Sir Wm. Armstrong, the water ram is to a large extent obviated by what are termed relief clack valves, which system answers well when the supply is under great pressure, and the quantity of water used is small in proportion to the power.

Q. 10. Explain if there are any substantial functional differences between your patented valve and those of Vaughn and Dunlap; if so, in what they consist; and in doing so, you may refer to any of the exhibits to illustrate your meaning.

A. 10. The Dunlap valve is simply an ordinary piston valve, such as is described in Rankine's work on the steam-engine and prime movers, paragraph 121, page 125. In the case described, the water or fluid flows in the reverse direction from that used by Dunlap; but in the water-pressure engine constructed by Darlington for the Alport mines in Derbyshire, and described in paragraph 312,
60 pages 574, 575, 576, and 577, with illustrations, in "Mechanics of Engineering and Machinery," by Julius Weisbach, vol. 2, we have in the main valve the exact counterpart of the Dunlap valve. This work of Weisbach was originally published in 1847; the present edition, from which we quote, was published in New York, John Willey, Astor place, in 1882. The description of the Alport engine found in the earlier editions, and by reference to page 557 of this edition it is shown that in the English translation of the first edition, published in London, 1848, by Hippolyte Bailliere, there was a description of this Alport engine. This Dunlap valve differs materially from that patented by myself, inasmuch as the packing is subject to wear and attrition in passing over the graduating device or opening. That such passage in practice will destroy the packing has been shown in the case of the Crichlow valve—a valve identical with the Dunlap valve in the arrangement of its parts. A description, with illustrations of this wear, was published in "Mechanics," the date of which I cannot give, but will furnish and attach hereto a copy of said work. The arrangement of the Vaughn device makes no proper provision for graduating. In the second place, the valve for closing the supply port to the engine and the supply port to the discharge are separate and distinct members, connected by means of a rod in order to leave passage for the water flowing in from the valve supply to the engine. This valve in the Vaughn device has the packing attached to it, and consequently moved with it, the seat being really the interior surface of a cylinder; but in my valve, the induction valve, the packing is at the seat, which is permanent, as is also the graduating device, and the valve without packing is prolonged to a cylinder. In the discharge or eduction valve of the Vaughn patent the seat is stationary and the valve is prolonged into a cylinder. In the Locke form the eduction valve is movable and carries the packing, the seat fixed, the
61 graduating device, also attached to the valve, moving with it. The seat of the eduction valve is prolonged to a hollow cylinder, through which—or along which, I should say—the eduction valve

and its packing moves while the induction valve is being opened. The Vaughn valve therefore consists of two pistons, one being the balancing piston, two movable packings, one stationary packing. The Locke consists of two movable plungers, one being a balancing plunger, two fixed packings, and one movable. The balancing piston of the Vaughn and the balancing plunger of the Locke are interchangeable, without affecting either valve in its functions or efficiency.

To return to the graduating device of Vaughn. It will be observed that the method resorted to is identical with that shown in Exhibit No. 4 of defendant, and which was shown by the testimony of Col. Lane and also by myself as being inefficient and not accomplishing the purpose of preventing water ram, said method being the coneing of the end of the plunger and expanding the opening of the seat into which the plunger is to enter; in the other case the coneing of the backing of the movable packing and expanding of the end of the tube into which it enters.

At this point the further taking of these deposition was adjourned until Saturday, February 20, 1886.

J. E. STEVENSON,
Notary Public, Ham. Co.

SATURDAY, *February* 20, 1886.

Pursuant to the above adjournment, the further taking of this depositions was resumed.

Col. LOCKE resumes his testimony as follows:

A. 10 continued. I desire, in order to complete the last answer, to add the following, viz: The work of Weisbach, early edition, I have found to be in the public library of Cincinnati. It is entitled
62 "Principles of the Mechanics of Machinery and Engineering," by Julius Weisbach, vol. II, London, Hippolyte Bailliere, publisher, 219 Regent street; Paris: J. B. Bailliere, 13 Rue de l'Ecole de Medicine, 1848.

The Alport mine, Derbyshire, engine of Darlington is described in Appendix III, pages 413, 414, 415, and 416, and stating that one was put up in 1842, the second in 1845, and the illustrations are reduced copies of the working drawings. I also now present the copy of "Mechanics" referred to in preceding answer, entitled "Mechanics," New York—the article referred to September, 1884, published monthly by David Williams, 83 Reede street, New York.

The article referred to is on page 176, entitled "Cup Leathers." I especially refer to the article from P. Barnes, Worcester, Mass., in which he illustrates and describes the Critchlow valve, which is identical with the Dunlap valve. He further illustrates new leather, Fig. 2; Figs. 3 and 4, illustrations of results of wear. In relation thereto he says: "The cup leathers are worn off on their outer surfaces by gritty matter which is present in the water, and also by the cutting or wearing action of the clear water, when it is used, across the edge of the leather as it comes up to and crosses the rows of

holes in the sleeve. At this point I will draw attention to the fact that in my valve in no case can this cutting of the packing from small streams produced by graduating device take place.

(The introduction of the article from "Mechanics" is objected to *in toto* as irrelevant and immaterial. Besides being twelve or more years too late in date (1884), it practically introduces "expert" testimony without giving any opportunity of cross-examination.)

63 Q. 11. You are referred to the evidence of Mr. Stanwood as to the alleged similarity of principle and functional operation in the devices which he describes. State whether or not you agree with him in his statements, and, if you disagree, upon what reasons.

A. 11. I do not agree with him. In speaking of the valve under discussion Mr. Stanwood says: "Each is furnished with a balancing piston or plunger, as shown by B in Figs. 1, 2, 3, and 4, sheet 1." This is not the fact, as what is here called a balancing piston to valve from Rankine, Fig. 1., Exhibit 1 Stanwood, is the piston to engine for moving the valve, as previously shown in my answer to question 8, on page 31, this deposition.

Again, he says, on page 5: "In Rankine and Locke types the balancing pistons are alike." To this the answer is a repetition of the foregoing.

On page 6, "Three means of obtaining graduated openings or closings of valves. Rankine shows notches in his valve plunger on both ends, which, by an axial movement of the same, gradually closes or enlarges the openings between supply and service pipes." In the Rankine device these notches are not relied upon for securing graduation. The action therein employed for such purpose I have already answered in reply to question 8, pages 30 and 31, this deposition.

That such is the manner employed for securing the proper graduating effect is shown by all the more modern water-pressure engines for similar purposes dispensing with any such notches, as shown in the Darlington engines, erected at the Alport mines, Derbyshire, in 1842 and 1845, as described in Weisbach's work and previously referred to, and by reference to a more complete description of the the water-power engine described by Rankine, on pages 140, 141, and 142, and previously referred to, of this more complete account as given by M. Junker, the engineer, as erected at the Huelgoat mine, Brittany, in 1831, and described in vol. 8, Troisieme Series, Annals des Mine, Paris, 1835.

64 On page 8, Stanwood testimony, he says: "Dunlap employs small perforations, over which cup packing can move without abrasion." Cup packing cannot move over such perforations without abrasion from contact of the edge of the leather on such perforations. The packing is also worn by the impact of the small streams from the perforations, such wear of cup packing being generally known by those using cup packing under similar circumstances, and I refer to the wood cuts or engravings of Exhibit No

1, this deposition, Figs. 2 and 3, in illustration of the manner in which wearing takes place.

(Objection.—The reference is objected to for reasons previously given.)

Witness, resuming answer, says:

Mr. Stanwood, in answer to question 6, page 9, says: "They are all intended to accomplish the same thing and operate in general and similar manner." In this I widely differ from Mr. Stanwood, for the intent is not the same. In case of the Rankine valve, I have already shown, in answer to question 8, what it was intended to do, and it would not hold an hydraulic elevator at rest at the will of the operator; it would not properly graduate the flow of water; in other words, it could not be used as a regulator to a hydraulic elevator; and from differences I have already stated as existing between these valves it is evident they do not operate in general and similar manner.

Mr. Stanwood, in answer 7, is, in my judgment, so illogical as not to admit discussion, for it is even more absurd than to maintain that shoemaker and hosemaker are identical, as they both have the same letters with a rearrangement. Mr. Stanwood in his rearrangement theory does not require that any one of the three valves should possess all the elements of my own. In conclusion, regarding all this discussion of similarity, invention, non-invention, etc., it is only necessary to call attention to the fact that Lane &
65 Bodley and others, after the expenditure of time and money, were unable to produce a valve having the requisite properties, as experience has demonstrated mine to possess.

(This last statement of the witness is objected to as impertinent and irrelevant.)

Q. 12. Would the device which he shows by his sketch to be an adaptation of the Rankine device be successfully operative? If not, why not?

A. 12. It would not, for the cup at the supply end of the moving valve plunger is placed so that its convex side will readily guide it into the hollow cylinder forming the seat of the valve. In this position the supply pressure in place of expanding the free edge of the cup so as to close the space between it and the inner wall of the hollow cylinder the edges would be collapsed, thus increasing the space through which the supply water would flow into the engine, which would thus cease to be under the control of the operator and could not be held at rest when so desired. Mr. Stanwood's finished sketch is more than a reproduction of the one made at the time of taking his deposition, inasmuch as he has added thereto a balancing piston not shown in the original sketch nor existing in the Rankine device, as pointed out in my previous answer to question 8. As further illustration, I submit a copy of the original sketch made by Mr. Stanwood and copy made immediately thereafter by myself. (Paper attached hereto, marked Exhibit 2.)

(Objection.—The latter portion of this answer is objected to, as obviously intended to cast a reflection upon Mr. Stanwood which the witness certainly knows to be wholly unfounded, the fact being that in submitting the complete sketch Mr. Stanwood has added nothing but what is shown in the printed cut in evidence and upon Stanwood Exhibit No. 1, which he had previously introduced, to wit, the balancing piston marked B in Stanwood Exhibit No. 1 and F in the Rankine illustration. The original pencil sketch of Mr.
66 Stanwood was intended to represent the Rankine device, as will appear on reference to the question which called for it, the feature referred to by Col. Locke being omitted because of the shortness of the paper, and it was natural for him to reproduce the device more completely in his finished sketch. The insinuation of an attempt to deceive in the matter is wholly unwarranted.)

Q. 13. The last two questions are repeated so far as applicable to the evidence of Mr. Thompson.

A. 13. So far as Mr. Thompson's evidence relates to matters discussed with regard to Mr. Stanwood's evidence, the answers to Mr. Stanwood are repeated.

Q. 14. If, then, you are correctly understood, the conception and consummation of the device described in your letters patent in suit originated with you alone and was carried by you alone up to the point of issuing of the patent. If this is correct; and, if not, wherein is it wrong?

A. 14. It is correct.

Q. 15. Please state when, where, and under what circumstances, if at all, you notified Lane & Bodley of your intention to apply for a patent; what was the knowledge on that subject, so far as you know; what conversation, if any, you had with either of them relating to their use of the device; what royalty was to be paid. State the whole of it in detail.

A. 15. I cannot mention any special conversations had in relation to the intended application, but during the year 1873, after being through with my work, I on several occasions remained at the works of Lane & Bodley and devoted time to the preparation of the model and drawings as part of application for letters patent on the valve under discussion. These drawings, and especially my work in the shop, was a matter of no secrecy, nor its object, and must have been known by many. During the pending of the patent I was residing in Utah as superintendent of silver-mining operations. I re-
67 turned to Cincinnati March 19, 1875, for *for* the purpose of rearranging an engagement with the mining company and consultation with them upon business affairs and making arrangements for my family to accompany me on my return to the West, for which place I started April 12, 1875. Upon April 10, 1875, I called at Lane & Bodley's to pay my respects to Col. Lane before my departure. As I was about to leave, Col. Lane broached the subject of my pending patent, asking me what royalty on valves I proposed charging them; I replied twenty-five ($25) dollars. Col. Lane then remarked that would be satisfactory when I got a good

patent. I returned to Cincinnati again, arriving May 10, 1876, remaining in Cincinnati eight days. During the latter part of this period Col. Lane told me that a Mr. Vaughn had called upon him in regard to a patent valve. The Colonel at the time was about starting for Philadelphia, and requested Mr. Thompson to show me the description of said valve in the Patent Official Gazette, as I had no knowledge up to that time of the Vaughn device, and, as I remember, Col. Lane spoke as though the visit from Mr. Vaughn was the first knowledge he had of the subject. As soon as I could get away I followed Col. Lane to Philadelphia, and on the evening of May 20, 1876, in Philadelphia, had a talk with Col. Lane in regard to the valve matter. This conversation was evasive upon the part of Col. Lane and business discussion declined, as he was recreating with a portion of his family. I left Philadelphia the same night, at midnight, and returned to Cincinnati the 2d of June, 1876; remained in Cincinnati until the sixth of the same month; then started on my return to the West, where I remained, with occasional visits to Cincinnati and New York, until the summer of 1884. I then was enabled to devote some time to the matter relating to the valve patent. On August 28, 1884—I read from my diary of that date—

(Reading from the diary is objected to unless the diary itself is attached as an exhibit.)

68 "Called on Col. Lane; told him I would like to arrange about the old matter of the valve." Lane—"What valve?" J. M. L.—"The hydraulic valve." Lane, in a bulldozing manner throughout—"You have no rights; nothing new in it anyhow. You were in our employ. Large sums were expended in experiments. I won't discuss it." J. M. L.—"You appear to have changed your views very much since I left here in 1874." Lane—"Yes; I know more than I did then." I then arose from my chair to go; standing I said: "I see no need of a bulldozing manner. Do you wish me to understand you to decline to discuss the matter at all?" Lane—"Yes, I do." I then left.

About August 30, 1884, I wrote a letter to the Lane & Bodley Company, severing my connections with them, which letter is attached to the deposition of Mr. Thompson. Before attaching my private diary, embracing accounts and memoranda, I desire to consult with my attorney as to my being able, and when, to recover into my personal possession said diary.

Q. 16. What claim, if any, was ever made by either of them, at any time before this suit in relation to your patent, that they had an equitable right to manufacture the valve because the original device and experiments had been made by you in their shop with their materials and during the hours of your labor, which belonged to them? State fully and in detail.

(Objection.—Objected to as leading and suggestive and irrelevant.)

A. 16. No such claim was made by any of the firm of Lane & Bodley or by their successor, the Lane & Bodley Company.

Q. 17. What was the fact in relation thereto? Was the device or experiments actually made in their shop, with their materials, and during the hours which belong to them?

A. 17. They were not. The device was complete as brought
69 by me from my home, as previously stated in this deposition; modifications were attempted against my judgment, the experiments therewith demonstrating the necessity of return to the original plans, which was done.

(Request by defendant's counsel:)

The witness is requested at this point to permit the counsel for defendant to inspect the diary from which he has read the dates and extracts referred to in answer to question 15, confining such inspection to those pages relating to the dates mentioned.

(Witness passes the book for inspection.)

Counsel for defendant requests the examiner to observe the pages under inspection and note the fact that the portion read by witness from the diary, beginning on the right-hand page, under date of August 28, 1884, is written in ink, whereas all the remaining matter is in pencil, and that the matter in ink is continued and concluded upon the page preceding, following the pencil entries relating apparently to the events of the preceding day; which is accordingly done and the book is returned to the witness.

Witness in explanation says:

A. This matter occurred in the following manner: While waiting for an opportunity to see Col. Lane I wrote out the data of the day up to the point of conversation with Col. Lane, and immediately on leaving the office of the Lane & Bodley Company I proceeded to the warehouse and wrote up the matter in ink, doing so that the record might be permanent of an interview that had been in its tone a surprise to me.

The page devoted to the date of August 28, 1884, not being sufficiently large to hold the entire matter, the remainder was placed upon a vacant space on the preceding page. The intermixture of pencil and ink records can be seen in the same diary under dates of
August 13th, June 14th, August 16th, and throughout the por-
70 tion preceding September the 4th it will be observed that the whole entry of dates in pencil and others in ink. I request the same officer to take the diary and verify the fact. Which was thereupon done.

(Objection.—All of which is objected to as irrelevant and immaterial.)

Adjournment.

The further taking of these depositions was at this point adjourned until Monday, February 22, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public, Hamilton County.

CINCINNATI, OHIO, *February* 22, 1886.

The further taking of these depositions was, by consent, adjourned until Thursday, February 25, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public, Hamilton County.

Pursuant to this adjournment, the further taking of this deposition was resumed on Thursday, February 25, 1886.

Examination-in-chief in rebuttal resumed of Col. LOCKE.

Questions by Hon. THOS. A. LOGAN:

Q. 18. A letter dated October, 1873, has been offered in evidence, and Col. Lane, referring to it, had erroneously given the date as of 1872, which error, however, was of no significance when we understand that we are speaking of the same letter.

Please state the circumstances and conversations, if any, with Col. Lane which preceded and called forth that letter.

(Objection.—The statement of counsel embodied in the question is objected to as without significance upon the record.)

A. 18. Early in October Mr. A. E. Watkins, a draughtsman
71 in the employ of Lane & Bodley, informed me that Mr. Charles Bauer, a former draughtsman, was to return to the employ of Lane & Bodley. This fact, as I understood it to be, largely influenced me in conversation subsequently had with Col. Lane in regard to renewal of my engagement with Lane & Bodley, the conversations upon the subject taking place on the 17th, 20th, 23d of October, 1873; the former by my seeking the same, the latter being sought by Col. Lane On the 28th of October, Mr. Bauer did return to the drawing-room as an employé, and I received a letter, of which I believe a copy put in evidence by the defense is correct, and understand it to be the embodiment of the conclusions arrived at from the conversations previously enumerated.

(Objection.—The answer is objected to as being not responsive to the question and the references to Mr. Bauer as being immaterial and irrelevent. Counsel requests examiner to repeat the question to the witness and require a responsive answer.)

To which plaintiff's counsel says that when the counsel for the defendant has this witness, or any other, under examination it will be his right to make such a request of the examiner and have the witness comply with it.

Counsel for defendant considers that it is the duty of the examiner to require responsive answers to questions, irrespective of the wishes of counsel, and renews the former request and desires the examiner to note his action respecting the same upon the record.

The examiner respectfully declines to comply with the request on the ground that he has no right to decide whether or not any answer is responsive to the question asked.

Q. 19. This sentence occurs in said letter: "All improvements in the line of our manufacture made by you during the time you are in our employ and deemed by us worthy of a patent
72 should be assigned to Lane & Bodley and yourself jointly." Speaking with reference to any inventions previously made by you while in their employ, do you know why Col. Lane inserted that sentence?

(Objection.—Objected to as irrelevant.)

A. 19. On account of a previous invention of a drum attachment for hydraulic hoisters for the purpose of economizing the quantity of water consumed by diminishing said quantity of water when light loads were to be elevated, this invention of mine is the one referred to by Mr. Thompson as identical to a patent subsequently obtained by Mr. Lovell, of Covington, Ky. When the model of this device was seen by Col. Lane, in June, 1873, he took occasion to ask me to visit a distant part of the works and desired me to give the control of the same to Lane & Bodley for a consideration and declining to make any of such drums excepting that Lane & Bodley had control of the same. The next day he informed me he had been kept awake the preceding night for two hours thinking of the matter, and that I must let Lane & Bodley control the manufacture of the device or he would terminate my engagement, and I must give an answer the following day. I paid no attention to the threat, as my engagement was by the year. On the 3d of July I was, or rather I informed Col. Lane that it was necessary for me, to go to Philadelphia He, knowing the circumstances, acquiesced in my being absent, and in a conciliatory manner remarked that he thought we could arrange in regard to the drum. I replied that I thought we could. These facts explain to my mind the portion of the letter quoted in the question and the animus dictating the same.

Q. 20. I do not quite clearly understand, in your answer 18, what bearing on that letter was had by the fact that Mr. Charles Bauer was to return to the employ of that firm. Please state it more definitely.

(Objection.—Objected to as irrelevant and immaterial.)

73 A. 20. I interpreted the re-engagement of Mr. Bauer as an indication that they wished to place themselves in a position or to convey the impression to my mind that Lane & Bodley were in a position to dictate terms to myself and discontinue my engagement at their will, as it was coupled with a proposition for employment of part of my time at their option. These facts influenced me in the conversation before enumerated.

Q. 21. Had any other draughtsman been employed during your previous service with Lane & Bodley?

(Objection.—Objected to as irrelevant.)

A. 21. Mr. A. E. Watkins was in the drawing-room from the fall of 1872 until the fall of 1873—about October 15. He was there a

little less than a year. In the summer of 1873 Mr. James B. Stanwood was in the drawing-room for about two months, as I was told, as a volunteer. Mr. Bauer was in the drawing-room as draughtsman from October 28, 1873, and still remained there when I left, in February, 1874. The before-mentioned were all the draughtsmen employed in the drawing-room of Lane & Bodley during my engagement, from November, 1871, to the last of February, 1874.

Q. 22. Then, if you are correctly understood, the history of the letter of October 28, 1873, is as follows, viz: During the summer of 1873 you had invented a drum device mentioned by you. Col. Lane desired to get it. You did not give it to him, and paid no attention to his demands. During this time there was no other draughtsman but yourself in the room. Early in October you were informed that Mr. Bauer was to return to the drawing-room. You had conversations with Col. Lane on the 17th, 20th, and 23d of October. On the 28th of October Mr. Bauer did come into the drawing-room, and on the same day they wrote you the letter referred to. Is that a correct statement?

74 A. 22. It is, with the exception in regard to there being no one employed in the drawing-room except myself during the discussion of the drum. Mr. Watkins was employed during that time, but left prior to the conversations with Col. Lane during the month of October, 1873.

Questions & answers 23 & 24 are doubled, but this is so in the original deposition of J. M. L.

Q. 23. During the whole of this time did Col. Lane make any claim to your patented valve?

(Objection.—Objected to as irrelevant and immaterial.)

A. 23. He did not.

Q. 24. In this drum device that you have spoken of the same device that was referred to by Col. Lane as the device that you were to produce, but in fact never did produce, for economizing the use of water?

A. 24. It is not the device referred to by Col. Lane as having been spoken of, his reference being to a device——

(At this point the answer of witness was interrupted.)

(Objection.—Counsel for defendant objects to the putting a new question until witness has completed his former answer, and requests the examiner to permit the witness to conclude his answer before further proceeding.)

Which request is respectfully declined on the ground that it is not the province of the examiner to rule upon either the manner of answering by witness or examining by counsel.

Q. 23. I interrupted you in your answer because my question did not ask for the details of Col. Lane's reference, which will be fully gone into hereafter, and the answer, if continued, would therefore have been irresponsive to the question. For the present I am deal-

ing with the drum device, and I wish to know whether that device was ever put into practical operation, how many were used, and when and where, and what knowledge Col. Lane had of such uses.

(Objection.—Question objected to as irrelevant and immaterial.)

75 A. 23. I know of none having been completed. The device in part—that is, the hydraulic engine prepared for the attachment of the drum—was put into a building on Walnut street, the building being under the control of Mr. John Carlisle. This machine was built by Lane & Bodley without a drum being attached on account of the declaration of Col. Lane that they would not make any unless they controlled the manufacture of the same.

Q. 24. Now, you may please state, as fully as you wish, details of the device whereby water was to be economized, what was done in regard to it, and any conversations you may have had with Col. Lane as to it.

(Objection —Same objection.)

A. 24. The device was an arrangement by which the number of strands used in what is known as a compound hydraulic hoister could be varied at the will of an operator, thus varying the power available at the end attached to the platform. The power available at the end of the rope or chain is equal to the total force exerted upon the piston divided by the number of strands; the water consumed in elevating the platform one foot is equal to the area of the piston multiplied by the one foot and divided by the number of strands employed. From this statement it will be readily seen that when raising the platform one foot that by increasing the number of strands we diminish the quantity of water consumed and decrease the amount of weight that can be raised upon the platform. It is evident, also, that the converse of this proposition is correct. In order that it may be fully understood, I here state that the strands correspond to the ropes passing from block to block in ordinary tackle, the engine used being equivalent to a hydrostatic or hydraulic press placed between the blocks of such a tackle, which blocks could be forced asunder by said press, thus communicating motion to the rope or chain roved in such blocks. Such a machine was made and erected in the warehouse of Lane & Bodley the
76 latter part of February, 1874. A series of experiments were entered into with said machine to determine the practical effect in regard to the weights lifted, the water consumed, and friction. After completing the experiments, using eight strands and six strands, we proceeded with the experiments with four strands, during which the fastening of the chain to the platform parted, precipitating a load and those upon the platform to the bottom of the run. This fall was of but a few feet, and as the platform went down into a pit which it nearly fitted, which pit contained some water which acting as a large dash-pot, gradually checking the falling platform and throwing the water upon a number of us engaged.

The first experiment gave a lifting power of 1,007 pounds on the platform with the consumption of about two and a half gallons of water. The second experiment—that is, with six strands—gave a lifting power of 1,812 pounds on the platform and a consumption of about three and a quarter gallons of water. As it was necessary, on account of my engagements, to leave for the West on the afternoon of the day of these experiments, I made no further experiments, but subsequently reported by mail the results, and from the data obtained, what would be the power-lifting power on the platform and quantity of water consumed in the use of four or two strands. The original notes of these experiments were left with Lane & Bodley. I cannot give any detailed account of conversations with Col. Lane in relation to this device; its working, as shown by the experiments, I understood from him as being very satisfactory.

Q. 25. Did you understand that this device was to be included, if completed, in the terms of the letter of October 28, 1873?

A. 25. I so regarded it.

Q. 26. During the time of the progress of the conception and experiments with this device, did Col. Lane make any claim to your valve device?

77 (Objection.—Objected to as irrelevant.)

A. 26. He did not.

Q. 27. You have spoken of the various draughtsmen employed in the drawing-room of Lane & Bodley. You may state whether at any time up to the completion of the valve device Col. Lane had any conversations in your presence with either or all of these draughtsmen regarding the development of the valve in any of its particulars or receiving from them suggestions as to it or giving them directions regarding it.

(Objection.—Objection repeated.)

A. 27. No; for from the time of my entry into the drawing-room, in 1871, there was no other draughtsman employed therein until several months after the valve was in actual use.

Q. 28. In giving his testimony as — the rise and progress of the valve and the alleged part he took in its development, Col. Lane has referred frequently to Rankine's work being in the library at the factory and his previous knowledge of the hydraulic engine shown therein, which we have in this record for brevity denominated the "Rankine device." You may state whether at the time of your employment at Lane & Bodley's that book was in their library, who procured it for them, from whence, at what date, and all concerning it.

(Objection.—Question objected to as leading, incorrect in its assumptions, and as immaterial.)

A. 28. The copy of Rankine's work shown during the evidence of Col. Lane I identify as the one in the Lane & Bodley establishment

and in the drawing-room library by the name of Lane & Bodley written therein by myself in the fall of 1872. I also recognize it as the copy purchased of Robert Clarke & Co. November 2, 1872, and by authority of Col. Lane charged to the account of Col. P. P.
78 Lane by Robert Clarke & Co., about which date of purchase it was taken to Lane & Bodley's establishment by me and shown to Col. Lane, who expressed himself as then first becoming acquainted with the book. The purchase was the result of my having seen the book on the book-shelves a day or two previous to the date of purchase and my having reported the fact to Col. Lane, when I received the instructions to purchase the book. I never saw any other copy of the work about the establishment of Lane & Bodley.

(Objection by defendant's attorney.—The testimony embodied in the foregoing answer is objected to, first, as immaterial, and, further, in connection with the question, as conveying a wholly unwarranted implication, based upon the incorrect assumptions of the question—the sole testimony of Col. Lane upon this point being as follows:)

By plaintiff's attorney:

Plaintiff's counsel now interposes to object to incumbering this record at this time with quotations from Col. Lane's testimony in the defendant's record. Defendant's counsel has stated his objection; if it is well taken the court will so decide from an inspection of the whole record, but it is asserted as a novel proceeding that counsel upon either side should make an argument or quote testimony in support of an objection while the witness is on the stand being examined.

By defendant's attorney:

Defendant's counsel continues: "Col. Locke referred to quite a number of English works which treated very largely on that class of mechanics, some of which we had at that time in our library, in the drafting-room, and we may have bought some others. I cannot recollect as to that."

By plaintiff's attorney:

Plaintiff's counsel says that the above quotation does not give the "sole testimony of Col. Lane" on that subject, as he will hereafter show to the court at the proper time.

79 By defendant's attorney:

Counsel for defendant states, having Col. Lane's testimony now in hand, that the quotation given as the sole reference to Col. Lane's testimony to the books in the library of the establishment, and that there is absolutely no warrant in his testimony for the assumption contained in question 28. If counsel for plaintiff thinks otherwise, he is requested, as a matter of simple justice to Col. Lane, whose truthfulness is sought to be impeached by the question, to refer to

any passage of his testimony supporting the assumption in question 28, and I now tender to counsel for plaintiff the testimony of Col. Lane for the purpose.

By plaintiff's attorney:

Plaintiff's counsel answers, first, that his question and every assumption contained in it is entirely supported by the testimony of Col. Lane; second, that he volunteers the suggestion to opposing counsel to read the record more thoroughly before being so positive as to its contents; third, that he is not here to indulge in any puffs of Col. Lane, whose testimony is like that of any other witness, and must stand or fall on its merits; fourth, that if it was worth the cost of doing so, he would move the court to refer to a master the whole of this objection in order that the cost thereof might be taxed to defendant.

By defendant's attorney:

Counsel for defendant states that so long as plaintiff's counsel avoids the challenge heretofore made, he deems it unnecessary to say more at present.

Q. 29. What reply, if any, did you make to the letter of October 28, 1873?

A. 29. I am under the impression I made some reply, but I am not certain, as my letter records of that date are not accessible.

Q. 30. Do you remember whether or not you accepted or declined the propositions contained in that letter?

80 A. 30. I always considered I had practically accepted it from the date of entering upon my renewal in November.

Q. 31. Then why did you leave as early as the ensuing February?

A. 31. I left by mutual consent of the parties—that is, myself and Lane & Bodley—for what I considered a more desirable engagement and on account of my health.

Q. 32. What knowledge had you up to the time of bringing this suit that the Lane & Bodley people were making and selling your patented valve?

A. 32. I had not any, being absent almost the entire time in the Rocky Mountain range of the country, with occasional flying visits to this city.

Q. 33. Page 16, answer 31, Col. Lane's testimony, is now read to you (counsel reads). Please state what was, in fact, the sum and substance of that conversation with Col. Lane, if your memory of it differs in anywise from Col. Lane's.

(Objection.—Question objected to unless confined to Col. Locke's recollection of the words used or the substance of the words used.)

A. 33. There was but one of the patents referred to, and that was the Dunlap patent; and, in reply, in substance I said that I was entitled to all the patentable features therein.

Q. 34. How do you know there was but one referred to?

A. 34. Because I had no knowledge of the Vaughn patent until a subsequent date in 1876, when my attention was called to it by Col. Lane.

Q. 35. I will read you answer of Col. Lane, page 4, to its completion, page 5, part of answer to question 4, commencing page 2 (counsel reads). Having heard that portion of the answer read, you are asked to explain definitely in what device, if any, that diamond form of graduation was used and what the result—
81 what stand, if any, you took as to it which required Col. Lane to issue such a positive order.

A. 35. No such an order was ever issued to me, the reverse being the case—that is, I was ordered not to use the serrated graduation as shown in my original sketches, as, in Col. Lane's opinion, as then expressed, they would infringe upon the Judson governor patent.

Q. 36. Were they ever used, notwithstanding such order?

A. 36. Yes, sir; it was found necessary to restore them, and were used ever since, so far as I know.

Q. 37. In speaking of the drawing No. 4, showing certain pencil traces, Col. Lane, as I understand his testimony, says, in substance, that the diamond form of graduation, as he calls it, the serrated graduation, as you call it, both being the same thing, originated with him, and that that change was made at his positive order, and that change, with the addition of the cup packing, was the only substantive change in the Rankine device. State briefly the history of these changes, who originated them, and whether, in fact, they constitute substantially the only differences between Rankine's and your device.

(Objection.—Question is objected to as involving repetition of matters already fully inquired into.)

A. 37. There was no alteration of the Rankine device, as no knowledge of it was—as no discussion of it, I should have said—was had until a knowledge of the same was obtained from the copy of Rankine purchased by Col. Lane through me in 1872. As to the detailed account of its conception by myself, I respectfully refer to an earlier answer of this deposition.

Plaintiff's counsel now offer in evidence a photographic copy of the diary of Col. Locke, dated August 28, 1884, the original of which
82 was quoted from by this witness on pages 53 and 54, Locke record, and is tendered to defendant's counsel in response to his objection, and defendant's counsel is understood as insisting upon the production of the entire book.

Thereupon witness is asked:

Q. 38. Who made this photograph copy?

A. 38. Mr. I. Quick, assisted by myself.

Q. 39. Without regard to your diary, you may state whether, on or about August 28, 1884, you had any conversation with Col. Lane

regarding your patented valve. If so, state what it was, as nearly as you can recollect.

(Objection.—Objected to as leading and suggistive.)

A. 39. On August 28, 1884, I called upon Col. Lane, asking him, in substance, with regard to my valve. He replied by asking me to what valve I referred. I replied the hydraulic valve. He then, in an overbearing manner, stated, You have no rights, nothing new in it, large sums expended in experiments. After continuing in that strain a few moments he refused to discuss it. I remarked to Col. Lane, You seem to have changed your views very much since I left here in 1874. He acknowledged that, saying at the same time that he knew more now than he did then. After rising to take my departure I asked the Colonel if I was to understand that he declined to discuss the matter at all. He replied, I do, and I withdrew. The foregoing is the substance of the result of the interview.

Plaintiff's counsel now states that if the photographic copy is accepted as meeting the objection on page 54, the quotations heretofore made from the diary may stand, but if said copy is declined and the objection is still urged, plaintiff's counsel, so far as he is concerned, withdraws from his record all the quotations upon said page.

(The withdrawal of any portion of the record is objected to by defendant's counsel.)

At this point the further taking of this deposition was adjourned until Friday, February 26, 1886, at 10 a. m.

J. E. STEVENSON,
Notary Public.

The further taking of this deposition was resumed, pursuant to the above adjournment, on Friday, Feb. 26, at 10 o'c. a. m.

Present: Hon. T. A. Logan, att'y for pl'ff; Maj. L. M. Hosea, att'y for def't.

Examination-in-chief of Col. J. M. Locke resumed.

Examination by Hon. T. A. Logan:

83 Q. 40. Have you prepared any enlarged photographic copies of the device shown in Rankine and other works heretofore referred to, together with the text accompanying the same? If so, please attach them, to be marked as exhibits for convenience of court and counsel hereafter and for a clearer understanding thereof.

A. 40. I have prepared enlarged photographs of Figs. 40 and 41, heretofore referred to as on page- 140, 141, of the work of Prof. Rankine, and now submit the same, to be attached to manuscript copy of article 132 in same work and heretofore referred to as on pages 140, 141, 142, 143. Above paper attached hereto, marked Exhibit No. 4; also enlarged photograph of Fig. 566, page 576, on the authorized translation of a Manual of the Mechanics of Engineering and the Construction of Machines, by Jules Weisbach, Ph. D., New

York, vol. II., John Wylie & Sons, publishers, 15 Astor place, 1882, hereto attached, marked Exhibit No. 5; also photograph of the wood cut of the same machine in the edition of the same work, London, Hippolyte Bailliere, publisher, 219 Regent street; Paris, J. B. Bailliere, 13 Rue de l'Ecole de Medicine, 1848, the plate or figure being numbered 332, and on page 414, hereto attached and marked Exhibit No. 6. These last two photographs represent what are known as the Alport Mine, Derbyshire, engines, as referred to in the former part of my testimony, marked Exhibits 7 and 8. I have written the text of Rankine and will attach it.

Q. 41. Please look at the sketches prepared by Mr. Stanwood and made exhibits by him to his testimony and state if you consider them accurate; and, if not, wherein are they inaccurate?

A. 41. In Exhibit No. 1, which is, as I understand from Mr. Stanwood's testimony, to be simply diagramatic and not to a scale, and can therefore be only submitted to a criticism so far as the general resemblance—proportioning parts are concerned, as are evident to the eye without the assistance of actual measurements—with
84 this limitation, I would call attention, in the first place, to Fig. 1, as shown by Rankine, 1870. Rankine describes the portion of the cylinder in which B moves as of greater diameter than the piston P. Furthermore, he describes B as a piston on which the water has to act on both sides in a manner to give motion as an engine to move piston P, with an addition to the upper surface of the piston of the engine of what is termed a "trunk" for the purpose of diminishing the marked quantity of water consumed in working this engine for operating the piston P, as shown. B being a packed plunger of the same diameter as the piston P, it is changed to a balancing piston, P and B being balanced by this construction. In Fig. 4, marked Locke, 1876, the piston P is represented as of smaller diameter than the piston B. Thus the piston B would overbalance the piston P, while, in fact, in the original device referred to B is designed simply as a balancing piston to the piston P. So far as Exhibit No. 2 is concerned, I have already answered the question in full.

85 CINCINNATI, O., *March* 18, 1886.

The cross-examination of Col. J. M. Locke begun pursuant toagreement.

Present: T. A. Logan, Esq., for plaintiff, and L. M. Hosea, Esq., for defendant.

Cross-examination by L. M. HOSEA, Esq.:

X Q. 1. Please state when it was you first called upon Col. Lane in relation to employment as draughtsman.

A. 1. It was in the fall of 1871. My impression is it was in the month of October. The precise date I do not remember.

X Q. 2. State the conversation that took place at said interview.

86 A. 2. I am unable to give the details of the conversation. There was a general discussion of the matter between us,

which was continued at subsequent meetings, I being the party that made the advances.

X Q. 3. You have stated that several interviews took place, and that on one or more occasions you accompanied Col. Lane to visit the hoister then in course of erection, and that during one of these visits you expressed your view with reference to the qualities and conditions of a perfect valve or regulator. Will you please now state whether it is not the fact that you based your application for employment upon your confidence in your ability to solve the problem to which you refer, and did you not in your conversations with Col. Lane refer to your own knowledge and experience in this connection?

A. 3. I think the visit to the Bare, Shinkle & Howell hoister in company *in* with Col. Lane was made a few days before my entering upon duties as draughtsman. I refer to the visit in which I enumerated the desirable qualities of a regulator. I did not base my application upon the basis of my being able to solve the problem, but did urge as an inducement my general knowledge of hydraulics.

X Q. 4. Please state what the conversation was to which you refer, what led you to state, or, as you express it, to lay down what, in your judgment, were the requisite qualities of such a regulator, and what, in fact, was the statement which you made.

A. 4. I am not able to make any verbatim repetition of the conversation. The statement of what I deemed to be the requisite qualities was the natural outgrowth in considering the pros and cons of the device then being erected, and naturally giving what I considered the salient points of the matter in consideration. In substance, among other things, I stated that the valve or regulator, whilst having the capacity to handle large quantities of water, at the same time must be readily controlled in the amount, requiring little force so to do; must in closing gradually diminish the
87 flow, and allow the flow in opening to be gradually accelerated.

X Q. 5. How many visits did you make with Col. Lane to the hoister referred to?

A. 5. I distinctly remember but once when I accompanied him there, but met him once or twice there by appointment, in addition. I remember meeting him once there by accident.

X Q. 6. By whom were such appointments made, and for what purpose?

A. 6. The exact circumstances under which the appointments were made I do not remember, the purpose simply being for the discussion of my engagement for the position, I at that time being the soliciting party.

X Q. 7. How many interviews had you with Col. Lane on this subject, and what period of time did they cover?

A. 7. My impression is they began in the latter part of October and continued through the fore part of November, 1871; the number I am unable to give.

X Q. 8. You have fixed the closing limit by reference to your employment, which commenced November 20, 1871. Will you now

consider more carefully when you first approached Col. Lane soliciting employment, your direct testimony leading to the inference that it was in the summer of 1871?

A. 8. I am unable to fix that date without reference to record of collateral events, but my impression is at present that it was in the latter half of October, but this I cannot positively state.

X Q. 9. If, as you intimate, you are able to fix the date by reference to the record of collateral events, please do so.

A. 9. This will require me to examine records which I have not at hand at this place, but I will examine said records at the earliest opportunity, and then answer.

X Q. 10. Will you make such examination during the noon adjournment and bring with you this afternoon the records from which you propose to testify on this point?

88 A. 10. I will to the extent which the time will allow.

X Q. 11. In order that you may not slight the matter from want of time, will you please now state what collateral records you refer to and where they now are?

A. 11. The records of a series of experiments of the artificial cooling of the fermenting cellars of the Gambrinus Stock Company will fix the date within a very few days. These records are among some of my papers in this city.

X Q. 12. Do you mean that your first visit to Col. Lane was within a few days of making these experiments; and, if so, about how many?

A. 12. I think it was within a week of the close of those experiments at the Gambrinus Stock Company.

X Q. 13. You have stated in your direct testimony that these experiments took place in the summer of 1871. Is your recollection of the fact equally distinct now; and can you, with reference to your former statement, fix more accurately the date of your first call upon Col. Lane?

A. 13. My recollection of the statement of the employment of the summer of 1871 was in regard to making a survey and plans of an incline plane for Mr. Post and others, of New York city, at the close of which, or interlacing with the latter part of it, experiments at the Gambrinus Stock Company's cellars were made, and the dates I will give will show how this matter stands

X R. 14. In what condition of progress, as to completion, was the Bare & Shinkle elevator when you visited it with Mr. Tilden, as you have stated?

A. 14. I do not remember the exact condition of it, but my impression is that it was not very far advanced, my attention being more directed to a comprehension of the idea and its method of accomplishment than to the extent of its erection—a question in which I took no interest.

X Q. 15. Describe what portions of the machinery were there.

A. 15. I do not remember.

X. Q. 16. This answer is not sufficiently responsive for one

89 of your habits of accuracy, nor is it consistent with your other testimony, and the examiner is requested to read to you that

portion of your direct answer No. 1 in which you refer to this hoister.

At this point the above-referred-to answer is read to the witness by notary, it beginning on line 13, page 1, and extends eleven lines on said page, typewriter copy.

Now, as you went to see a hydraulic hoister and refer to your recognition of the future outcome of "that style of machinery," it is fairly to be inferred that the hoister which you saw was fairly in the way of completion. Will you now please reconsider and answer cross-question 15 more fully?

(Plaintiff's counsel objects to the foregoing question for the following reasons: (1) It is not the province of defendant's attorney to indulge upon this record in such criticisms of the witness as he has, unguardedly no doubt, permitted himself to make; (2) this is neither the time nor place for counsel to assert anything in regard to the accuracy or consistency of the witness; (3) in asking him to reconsider conveys an imputation of itself, and the witness is instructed by his counsel that if that sort of thing is continued he can protect his accuracy and consistency on the record by his answers.)

Statement of defendant's attorney:

The action of defendant's counsel seems to be singularly misconstrued. The object was to favor the witness by giving him the opportunity in advance to explain inconsistent portions of his testimony. This consideration will not be extended hereafter.

Plaintiff's attorney'- statement:

Plaintiff's counsel says that upon again reading the question as it stands he is still of the opinion that it is very offensive; whether designedly so or not he does not undertake to say.

90 A. 16. The simplicity of this hoister is so great as to be readily described in a few words, to wit: As like a plunger pump, the platform on the top of the plunger actuated by water let in underneath the plunger. Such a simple idea as this required no extensive machinery, to be seen to be comprehended, nor great complication of machinery. In speaking of a simple idea I do not mean to belittle the idea, for its great simplicity was one of its greatest beauties; and, as before stated, I took no interest as to the extent in the operation in the erection.

X Q. 17. Please describe what you saw there in the way of machinery relating to this hoister or in the way of work of any kind, complete or under way, for the purpose of its erection on the occasion of the first visit to which you have referred.

A. 17. I went for the purpose of obtaining a knowledge of the principles of the machine, and, having done so, paid no further attention to the matter in regard to the erection of the same for the reasons above stated; and I now repeat my answer to cross-question 15.

X Q. 18. What did you see there which gave you a knowledge of the principles of the machine?

A. 18. I cannot say how much of my knowledge was obtained from what was told me or what I saw.

X Q. 19. Nor does this answer the question. I again ask you to describe what you did see which in any way related to the hoister in question.

A. 19. I do not remember.

X Q. 20. Have you any recollection whatever of seeing anything connected with this hoister?

A. 20. Simply some men working. I am not able to specify any particular piece of machinery. As before stated, I went for the purpose of obtaining an idea of its principles, and succeeded in so doing. The detail of means I do not remember.

(Objection by defendant's attorney.)

91 (The last sentence of this answer is objected to as irresponsive and irrelevant, and the question, No. 20, is repeated with a request to the witness for a more explicit answer.)

X Q. 21. Have you any recollection whatever of seeing anything connected with this hoister?

A. 21. I respectfully repeat my answer to cross-question 20.

X Q. 22. Without being able to specify any particular piece of machinery, can you state whether there was any machinery for the elevator there?

A. 22. I cannot.

X Q. 23. What were the men working at whom you saw there?

A. 23. I think they were in the pit; for what I do not know.

The further taking of this deposition adjourned until 2 o'clock p. m.

J. E. STEVENSON,
Notary Public.

X Q. 24. Having now had an hour or two for reflection since the last answer, are you able to state any more explicitly the condition as to completion of the hoister in question at the time of your first visit there?

A. 24. I have no reason for modifying the answers heretofore given, and the time referred to in the question has been devoted, as by previous agreement, to looking up old records.

X Q. 25. What was the pit to which you have referred?

A. 25. The hole at the bottom of the hatchway.

X Q. 26. Were the workmen referred to engaged in digging the pit or in placing the hoisting machinery therein?

A. 26. I cannot state. I do not remember what they were at.

92 X Q. 27. With whom did you converse at that time and place concerning the elevator?

A. 27. I am unable to state.

X Q. 28. Did you converse with any one?

A. 28. I asked some questions to obtain the information that I wanted.

X Q. 29. Of whom did you ask these questions and what information did you obtain?

A. 29. I have before stated that I do not know who I addressed, and I obtained the information of the general arrangement of the hoister.

X Q. 30. How deep was the pit which you saw?

A. 30. I do not know.

X Q. 31. Was the casing or any portion of it in position?

A. 31. I have no recollection in regard to it.

X Q. 32. You became subsequently familiar, did you not, with the mode of constructing and setting up this class of elevators?

A. 32. I subsequently became familiar with the details of construction as made by Lane & Bodley, and made some minor modifications in regard to the bottom support and casing.

X Q. 33. Is it not a fact that the casing was made and brought to the place before the digging of the pit and was sunk into the pit as the digging progressed?

A. 33. That is a matter of which I have no knowledge.

X Q. 34. Did you not afterward take part in designing and planning the construction and setting up of similar elevators?

A. 34. I did the drawing-room work in regard to some of them, but their setting up was not under my direction or personal supervision.

X Q. 35. Speaking from your engineering knowledge and experience, what was and is the manner of placing the casing of the pits used in such elevators?

A. 35. The word "pit" was generally applied in these
93 elevators to designate simply the excavation made so as to allow the platform to go down to the level of the cellar floor.

X Q. 36. You have described the mechanism of this elevator as a plunger pump with a platform on the top of the plunger, which obviously necessitates placing the pump beneath the platform at its lowest point, to which end a pit is necessary. Now, when you in your answer to cross-question 23 say that the men were in the pit what did you mean?

A. 36. Simply in the excavation in the botton of the cellar, below the floor line of the cellar, the pit not being a necessary part of such devices in all cases, as I have furnished plans where the whole casing was above ground.

X Q. 37. Was the Bare & Shinkle elevator of this latter character?

A. 37. The Bare & Shinkle elevator was arranged so as the platform could be lowered to the grade of the cellar floor; consequently there was what is technically called "the pit."

X Q. 38. Was there not also beneath this a pit in which the pump barrel was placed?

A. 38. At the time of my first visit I am unable to state, but upon

its completion, as I subsequently knew it, it was—the casing was so buried.

X Q. 39. How long a time intervened between this visit and your call upon Col. Lane in regard to employment?

A. 39. I am unable to state.

X Q. 40. Give your best recollection or impression as to the time.

A. 40. My impression — that it was but a few days, but I am not clear upon that point.

X Q. 41. How far had the construction of said hoister progressed when you visited the same with Col. Lane?

A. 41. I cannot be very definite with regard to that, but think that the platform was not yet in place.

94 X Q. 42. How long was this visit after the first visit, to which you have referred?

A. 42. That I am unable to state.

X Q. 43. Have you any notes or memoranda to which you can refer to refresh your recollection as to these occurrences?

A. 43. I have no note or memoranda made in relation thereto in Cincinnati, but probably have in my office in Salt Lake City. I say probably, as considerable number of my papers that were left here upon my moving to the West have been lost, and I do not know positively whether the notes referred to are among those taken West or with those that were lost during my absence.

X Q. 44. It is now two months or thereabouts since Col. Lane's testimony was taken covering the events of this period; you being present at this examination, have you made any effort to find among your papers any notes or memoranda to substantiate your statements now under consideration or the events of that period as you narrate them?

A. 44. I have sought for the memoranda made at the various times in the form of a diary in order to be more specific in regard to dates, but have failed to find said diary; hence I have used collateral events for these events of 1871.

X Q. 45. In the course of your direct testimony you have referred to July, 1884, as the date when certain records existed in the drawing-room of the Lane & Bodley Company; please state fully the circumstances connected with that date.

A. 45. Those data were shown me, at my request, by Mr. Bert Baldwin, in the drawing-room of the Lane & Bodley Company, on the date specified, and a memoranda of the fact was made by me.

X Q. 46. You have stated that before the interviews with Col. Lane, when the hoister before referred to was under construc-

95 tion, you devoted considerable time, thought, and investigation to the matter, presumably referring to the construction of hoisters. What investigation did you make?

A. 46. During the summer of 1871, whilst working upon the subject of an incline plane to Mt. Auburn, this city, I investigated all the safety devices described in the works on hoisters and such other devices as I could obtain knowledge of, and devised one which I

subsequently caveated. I also gave considerable attention and thought to hydraulic elevators, to which the apparatus at Bare, Shinkle & Howell's had drawn my attention.

X Q. 47. Your statement to which I referred had reference to hydraulic elevators. What investigation did you make in the matter of hydraulic elevators after the visit to Bare, Shinkle & Howell's?

A. 47. I looked up the subject of English gravity water elevators, and especially the German water-pressure or water-column engines.

X Q. 48. Were you familiar at or before this time with the Armstrong engine shown in the work of Rankine in evidence?

A. 48. I do not remember of any full detail of what is known as the Armstrong engine in the work of Rankine, but I was not at that time familiar with what is known as the Armstrong engine from that or any other source.

X Q. 49. Were you familiar at that time with the construction of the engine figured on pages 140, 141, and 142 of Rankine's book, in evidence?

A. 49. I was not. My first knowledge of it was obtained from a copy of Rankine's book, in Clarke's book store, this city, about November 1, 1872. It is possible I may have seen an illustration of the same in the first English edition of Weisbach, in the year 1850. If so, it had entirely escaped from my mind, and my general impression of water engines was of the German engines of Reich-
96 enbach, as figured in "Muller's Physics," published at Philadelphia by Blanchard & Lee during the decade 1850.

X Q. 50. Your recollection is clear and explicit in the matter of your answer as above given, is it?

A. 50. Yes.

X Q. 51. And you now state that you had no knowledge of or reference to the valve of which an illustration is given in Rankine's work at the time of these interviews with Col. Lane and up to November, 1872. Is this correct?

A. 51. It is.

X Q. 52. And you made your invention without any reference to or knowledge of the said construction?

A. 52. I did.

X Q. 53. When, where, and under what circumstances did you first conceive the completed idea exhibited in your patent?

A. 53. At my laboratory, No. 265 Walnut street, and at home, it being worked out or developed up step by step, having first laid down the requirements of such a valve or problem to be solved.

X Q. 54. When did you begin and how long were you so engaged and in what manner did you work out the problem?

A. 54. I began shortly after the first visit to Bare, Shinkle & Howell's hoister, in course of erection, and devoted irregularly my time to it for several days, especially evenings until after midnight, making free-hand sketches, subjecting them to criticism; in other words, the usual method pursued by engineers and investigators.

X Q. 55. Did you construct any experimental models or structures?

A. 55. I did not deem any necessary, and therefore did not.

X Q. 56. When was this?

A. 56. This was between the period of first visiting the
97 Bare, Shinkle & Howell hoister, in course of construction, and my engagement with Messrs. Lane & Bodley as draughtsman.

X Q. 57. How many days was it after your visit to the hoister referred to before you had completed the idea of the invention?

A. 57. I am unable to state; but after its completion I still continued to give it thought, not knowing but what I could make some improvements therein.

X Q. 58. State, as nearly as you can, the length of time that intervened between the beginning and the end of solving the problem referred to.

A. 58. I have no data on which to base such a statement, or rather, exact limitation.

X Q. 59. To whom, if any one, did you communicate the invention prior to your employment by Lane & Bodley?

A. 59. I do not remember communicating it to any one.

X Q. 60. Where are the drawings you say you made at this time?

A. 60. The drawings were simply free-hand sketches, most of which were destroyed, and I have no positive knowledge of any being in existence. My memoranda sketch book of that period may be at Salt Lake City or may have been among papers previously stated as being lost.

X Q. 61. Why have you made no effort to ascertain the *the* existence of and to produce the drawings in question?

A. 61. The assumption is incorrect. Such effort has been made by me, searching through numerous boxes of apparatus, records, and even geological specimens, pamphlet boxes, etc., in this city, and had others seek among a large amount of original data stored at my office in Salt Lake City.

X Q. 61. When, if at all, did you first communicate to Col. Lane or exhibit to him the drawings of your said invention?

A. 62. Free-hand sketches were brought from my home just
98 prior to the making of "Exhibit No. 4, Defendant," it having been brought at the request of Col. Lane, I having previously stated I had a plan of a valve which would fulfill the required conditions.

The further taking of this deposition was at this point adjourned until Friday, March 19, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public, Ham. Co., Ohio.

FRIDAY, *March* 19, 1886.

Pursuant to above adjournment, the further taking of this deposition was resumed.

Present: As above.

Cross-examination of Col. LOCKE resumed by L. M. HOSEA:

X Q. 63. Are you able this morning to state any more definitely the date of your first visit to the Bare, Shinkle & Howell hoister

and the degree of completeness which the work had reached at that time?

A. 63. I am not.

X Q. 64. In making your investigations into the matter of hydraulic elevators at about the time of the above visit what works did you examine?

A. 64. I do not know as I can state all the works. I can state some of them—Rees' Cyclopedia, Encyclopedia Britt'an-ica, seventh edition; Physics par Poulett, Mueller's Physics, Ewbanks' Hydraulics, and probably others that I do not remember.

X Q. 65. Did you examine Weisbach's book?

A. 65. I did not.

X Q. 66. Did you examine Rankine?

A. 66. I did not.

X Q. 67. Why did you not?

A. 67. Because I hadn't them to examine.

X Q. 68. You had been previously familiar with these books, had you not?

A. 68. I had not.

99 X Q. 69. In your direct answer 7, you refer to the Weisbach book in connection with the events now under examination, which you say drew your attention to hoisting machinery, in such a manner as to convey the impression that you were familiar with said book at said time. If you did not intend to convey such inference, why did you refer to the book in that connection?

A. 69. As the question is based upon an inference, I desire that the passage referred to be read.

Counsel reads to witness the first twelve lines in his direct answer 7.

I take issue as to the inference drawn, the facts being that the quotation is made to support a conclusion I had individually arrived at with regard to an essential feature and not as in any way used in the sense indicated in the question.

X Q. 70. You state that at the time of your engagement with Lane & Bodley it was "understood in common that your theoretical knowledge was in advance of your acquaintance with the practical operations of the machine shop." Please explain fully what you mean by that statement.

A. 70. Simply I was not fully acquainted with the adapting of the shape of parts and number of pieces to the part of a machine so as to be most economical in construction, considering the shop and its appliances in which the work was to be done.

X Q. 71. This states very well what you did not know; will you state, with equal brevity and clearness, the general nature of the theoretical acquirements which you say were understood in common, meaning by that by yourself and Lane & Bodley, to be in advance of your knowledge of practical operations?

A. 71. My father was well known to have been one of the

100 leading investigators and instructors in the sciences. I had

been under his direction from my earliest training; had myself been instructor in the sciences, and for two years had been lecturer on the physical sciences at the Ohio Mechanics' Institute, where Mr. Bodley, during his life, was a constant attendant——

Counsel for defendant interrupts the witness at this point and calls his attention to the fact that the answer is not responsive to the question. The question relates to the nature of the acquirements themselves and not to the opportunities for acquiring them.

Plaintiff's counsel once more objects to the interruption of the witness in the middle of an answer, and insists that hereafter the well-known rule shall be observed, that all objections must be reserved until the witness has concluded; and in order to test the question and in order to afford defendants an opportunity to be heard in court upon this matter, plaintiff's counsel now instructs the witness to pay no attention whatever to any such interruptions in the future, not to allow himself to be disconcerted or diverted from his testimony, but continue his evidence in his own way, as though no such interruption had taken place.

Counsel for defendant calls attention to the action of plaintiff's counsel and that of the examiner in respect to question 24 of this witness upon the direct examination. The rule there established for this examination, having been insisted upon by complainant's counsel, is equally available to the defendant, and the witness is now requested to answer the pending question, omitting a detail of his ancestral and other opportunities for acquiring knowledge, but confining himself to a general statement of the acquirements which he possessed, as call- for in the question.

Plaintiff's counsel answers the above as follows: Question 24
was put to the witness in regard to a certain device, which
101 question was answered, and the witness was about continuing his answer on an entirely different subject, as it then appeared to his counsel, and his counsel thereupon interrupted him, at which moment defendant's counsel, under the assumption that a new question was to be put, objected to the putting of such question until the previous one had been fully answered, and the examiner properly made the ruling which appears of record. Plaintiff's counsel adheres to the rule twice explicitly laid down by the late Judge Swing in cases which will be hereafter referred to if necessary, which rule, as counsel understands it, is this: Where the witness is proceeding to make answer to a question which it is apparent he comprehends he is not to be interrupted until he has concluded, and neither counsel nor examiner can stop him in the middle of his answer, inasmuch as every witness has his own way and must be the judge of his own manner of delivering his testimony; but, on the other hand, when it is evident from the answer that witness does not understand the question, but is answering upon a misconception of it, he may be interrupted to the extent of having the question again read to him. Plaintiff's counsel disclaims any idea of wishing to assume an arbitrary attitude with regard to this examination, but assuredly thinks himself right in the position he has assumed.

Witness continued his answer thus:

A. 71. I was familiar with the general laws of physics, the methods of calculations of strains, and the application of the laws of the strength of materials, and during the discussions prior to engagement Col. Lane had expressed himself as satisfied with my theoretical acquirements, but urged my lack of experience in the machine shop as an objection.

X Q. 72. Are you quite clear in your recollection that at
102 the time of these interviews you had no knowledge of the works of Weisbach and Rankine, to which you have referred, and that in your investigations into hydraulic machinery and arriving at so clear a conception of the necessary conditions of perfect success you entirely omitted to refer to these works simply for the reason that you yourself did not possess them?

A. 72. I cannot state whether I had any recollection of the existence of any such works at that time or not, but I am positive I had no recollection of the matter under discussion therein; consequently no influence on the course of thought at that time in relation to this matter of hydraulic machinery. I at the time was under the impression that the authorities I did examine were exhaustive.

X Q. 73. In the course of your studies, investigations, or labors in the various capacities referred to in your direct answer 2, and including your experience up to November, 1871, did you or did you not ever have occasion to refer to the works of Weisbach and Rankine, and did you not, in common with other professedly competent engineers, consider these two authorities as leading ones and their works well known to engineers everywhere?

A. 73. I did not use any of Rankine's numerous works as books of reference, and think I did not use Weisbach; but, if so, then only the first volume, prior to 1871. Said first volume does not embrace hydraulic machinery. With regard to the estimate placed upon Rankine's works, there is, I think, considerable diversity of opinion as to their merits.

X Q. 74. Why, if you referred to Weisbach at all in connection with your investigations, did you omit the volume or volumes referring to hydraulic machinery?

A. 74. From the fact that Cox had translated and there was published a large first volume, with a promise by the publishers that the second volume was soon to make its appearance, which was not published until late in the seventies—I think about 1878. An-
other book, being a second part of the volume, has also been
103 published, still another part remaining as yet unpublished. There has been published in England a translation of one of the earlier editions of the volume, embracing hydraulic machinery, which volume I did not have and did not remember as existing.

X Q. 75. How many interviews did you have with Col. Lane prior to your employment with reference thereto?

A. 75. That I am unable, as previously stated, to state.

X Q. 76. Did you ever file a caveat in the Patent Office with reference to the valve in controversy?

A. 76. I did not.

X Q. 77. When you left their employ in 1874, what papers did you take away from their drawing-room?

A. 77. I took none; I wished to take *some* papers, memoranda, but they being in book form furnished by Lane & Bodley, Col. Lane objected, and consequently they remained.

X Q. 78. Please detail the circumstances under which you obtained access to their drawing-room in July, 1884.

A. 78. I was at that time in the employ of the Lane & Bodley Company, and was frequently in and out from the drawing-room. At that time, also, I was requested by Col. Lane to examine and make suggestions in regard to some drawings then being made in the drawing-room. I was also directing the construction of some machinery being built by the Lane & Bodley Company for parties in Utah, from which it will be readily seen that I had the entry of said drawing-room as I desired—in fact, references were frequently made as to what I would find in the drawing-room from the office. The facts herein stated may not all have occurred in the said month of July, but were long about that period.

X Q. 79. What was the occasion and object of your examination at that time of calculations or other papers in their drawing-room relating to the early hydraulic elevators built by them?

A. 79. I desired to see if the papers and calculations which I had made previously were still in existence.

104 X Q. 80. What was the result of your examinations into these particulars?

A. 80. I found some of the memoranda and calculations were in existence. The search in the drawers and so on was made by Mr. Baldwin and not by myself. One drawing I desired to see, which drawing I failed to find, although I had seen it in the drawing-room some time within the two or three preceding years.

X Q. 81. What drawing was this?

A. 81. It was the drawing previously described in my direct testimony as the piston valve with hexagonal openings.

X Q. 82. You had, then, it appears, access to their drawing-room on previous occasions. How often and when did these occur?

A. 82. On all my various visits to Cincinnati, from when I left, in February, 1874, to my withdrawal, in August, 1884.

X Q. 83. You state in your direct answer number four that your duties were to put into shape the plans as furnished you in proportioning parts, etc., prior to their being put into the shop for execution. How do you reconcile this with the statement that it was understood that your attainments were of a theoretical and not of a practical character?

A. 83. There is no statement that they were not of a practical character; simply that my knowledge of the theoretical mechanics was in advance of my knowledge of the practices in the machine shop, especially with its appliances limited.

X Q. 84. You state in direct examination that your first duties in the drawing-room were the examination of plans proposed for the regulating device of the hoister then in course of construction. What hoister was this?

A. 84. This was the regulating device for the Bare, Shinkle & Howell's, as I did not consider it fully constructed until
105 provided with satisfactory regulating device. The balancing chain was also, I think, added to it after I had entered the drawing-room.

X Q. 85. How far had the construction been completed at the time your employment commenced?

A. 85. That I am unable to state. I am unable to state the condition of the hoister at the time I entered upon my duties in the drawing-room.

X Q. 86. For what portions of the structure did you furnish drawings or make calculations?

A. 86. I made the drawings for some portions of the regulator moving gear, and calculations in relation to proposed regulators.

X Q. 87. What were the proposed plans for the regulating device which you examined and which you demonstrated would be impractical?

A. 87. One was made by the use of globe valves from which the screw stem had been removed, also the hand wheel, and a smooth stem and levers substituted for actuating the valve; the other was Ludlow or gate valves treated in a similar manner.

X Q. 88. To whom did you communicate your demonstration and objections?

A. 88. To Col. Lane.

X Q. 89. If, as you state, you had expressed to Col. Lane previously your judgment as to the requisite qualities of a perfect regulator and had, as you claim, solved the problem of the construction of such a regulator, why did you not at the time now in question, when you were charged with the examination of proposed plans for a regulator and had demonstrated the impracticability of the plans proposed, then inform Col. Lane that you had solved the problem, as you claim to have done?

A. 89. After I had theoretically demonstrated by calculation the impracticability of the methods proposed, and my report not being satisfactory, but the work continued and the devices were attempted to be used, it was neither my place nor duty to insist upon
106 plans of my own, especially as they seemed to be neither sought nor cared for, and I was impressed with the idea that Col. Lane realized that the essential feature rested in the regulator, and that Lane & Bodley were anxious to have one of their own which they could entirely control.

X Q. 90. What regulating device was first used on the hoister in question?

A. 90. As far as my knowledge extends, one of the two above mentioned. Which one I cannot state.

X Q. 91. Then was what is known as the "disc valve" applied to this hoister?

A. 91. My impression is that it was.

X Q. 92. Detail the circumstances under which the departure was made from the globe or Ludlow valve to the disc valve, how the suggestion arose, when, how, and to whom you made your objec-

tions to the device, and whether any other plan of valve was suggested by yourself or others at that time and in that connection.

A. 92. As previously stated, my intercourse was carried on through Col. Lane and the suggestion, or really the general plan for the disc valve, came from him and, as I understood, originated with him. I made my analysis of the plan and reported the results, which were adverse to the device. Nevertheless, instructions were given to me and valves were made, tested, proved unsatisfactory, modified several times in an effort to overcome defects that I considered inherent, and in all cases resulted in unsatisfactory valves. Another valve was proposed based on the old-style piston valve for steam-engines, which underwent some modifications. Drawings were made, but no valves were constructed in accordance therewith. This drawing is the one I have previously stated I could not find in the drawing-room. Plans were also prepared, shown in Exhibit No. 2 of defendant.

X Q. 93. Will you please prepare a pencil sketch of the valve to which you refer as based on the old-style piston valve and attach as an exhibit to your deposition?

107 A. I will to the best of my ability, although it may not be correct in its details.

The further taking of this deposition at this point adjourned until Saturday, March 20th, at 11 a. m.

J. E. STEVENSON,
Notary Public.

SATURDAY, *March* 20, 1886.

The further taking of this deposition resumed.

Cross-examination of Col. J. M. LOCKE continued by L. M. HOSEA, Esq.:

Col. LOCKE: In compliance with the request of Maj. Hosea, I submit herewith a sketch which sketch does not claim to be a reproduction in detail or proportioning of parts, but simply diagrammatic, and showing the general principles involved in the device, which general device was discussed with many modifications, and what precise modifications were adopted in the drawing I am unable to state.

(The examiner is requested to mark the exhibit "Locke Sketch No. 1," which is done.)

X Q. 94. Please state who suggested the valve exhibited in your "Sketch No. 1," and from what you made the drawings of the same to which you have referred, and at what time the same were made, relative to the other exhibits.

A. 94. I have not the data from which to be so circumstantial, but my impression is that it was probably suggested by the Reichenbach valve or regulator, as illustrated in Mueller's Physics. My impression is that in time this drawing followed after "Exhibit No. 2" and prior to "No. 4," both of defendants. Of this I cannot be

positive, having scarcely thought of the matter since the production of the drawing.

X Q. 95. In your direct testimony you assign the relative
108 date of this valve to follow "Exhibit No. 3," and enter into a detail- description without reserve. What is the occasion of your present doubt on the subject?

A. 95. Further on in said direct testimony will be found limitations as to the description of details, and I think also that the exact position in the chronological order is not assumed or stated as absolute, but my impressions then were and now are (by then I mean the time of giving my direct testimony) as stated—that is, following shortly after the puppet or bonnet valve drawing.

X Q. 96. From whom did you obtain the information, or if, as you intimate, the information was obtained from a book or other source, by whom were you instructed to make this drawing? State in detail all the circumstances showing how you came to make it.

A. 96. I have no distinct recollections on these points, but it is presumable my instructions to proceed with the drawing were received from Col. Lane, as business between Lane & Bodley and myself was transacted through Col. Lane for reasons I have stated more fully in my direct testimony.

X Q. 97. Did you first direct Col. Lane's attention to the Reichenbach valve, or he yours?

A. 97. I am not able to answer that positively, but the probabilities are Col. Lane's attention was drawn to it by myself.

X Q. 98. Who suggested the bonnet valve "Exhibit, No. 2, defendant"?

A. 98. I believe that to have been my suggestion.

X Q. 99. State the circumstances under which you came to suggest it in detail?

A. 99. I have no recollection of the details.

X Q. 100. State as fully as you are able the circumstances under which you suggested it, and what was done in pursuance of your suggestions.

A. 100. The disc valves having proven unsatisfactory, the
109 effort was made to render practicable the use of a puppet or bonnet valve by the addition to such valve of a balancing piston. After the drawing was made, a valve was constructed and attached to the city water supply in the yard at Lane & Bodley's, where it appeared to act well in overcoming the defect found in the previous experiments with puppet or bonnet valves, so far as the difficulty in the movement from the seat was concerned. Nothing further was done with this valve that I know of.

X Q. 101. When did you adopt the figure representing a padlock, which appears upon Defendant's Exhibits Nos. 4, 5, and 6, as a device upon your drawings?

A. 101. When I made said drawings from my sketches brought from home. Said drawings represent the design in such sketches, excepting so much of said sketches as was left off from "Exhibit 4" under instructions from Col. Lane. I may have used such a design

at other times, as it had been long used in the family especially to designate said family.

X Q. 102. In your answer to cross-question 100 you did not explain the circumstances under which you came to suggest the bonnet valve, your statement in direct examination being that your duties were to put in shape the plans as furnished you. How was it that you came to suggest a plan of your own?

A. 102. That was a voluntary act upon my part and not required as a part of my duties; and as Maj. Hosea, like myself, is an old regular army officer he will fully appreciate the fact, as asserted among army people, that the one who volunteers to do more than his absolute duty commits a mistake. I have paraphrased the army saying.

X Q. 103. However this may be, I must again repeat my question and request you to explain how and why it was that you made this voluntary suggestion.

A. 103. Lane & Bodley were in an embarassing position, having erected hydraulic elevators which were unsatisfactory in their
110 action on account of a lack of a proper valve or regulator; and from my point of view the pleasant relations existing between Col. Lane and myself would seem to dictate that I should make such suggestions as I thought to his advantage, although such suggestions were not called for by my business engagement with Lane & Bodley.

X Q. 104. Were you at the time you devised this bonnet valve and made the drawings here exhibited satisfied that it possessed all the requisite qualities of a perfect regulator?

A. 104. In combination with its valve, gear I regarded it as one that would give satisfaction, the valve gear being the device to give a graduated opening and closing to the valve, whilst the shipper, as it is called, approximated a uniform movement. In the exhibits shown only a portion of the valve gear is shown.

X Q. 105. I did not ask you whether you thought it would give satisfaction, but whether, in your judgment at the time, it possessed the requisite qualities of a perfect regulator and answered the conditions of the problem which you say you had solved prior to your engagement with Lane & Bodley. Please answer the question thus put.

A. 105. I did not consider it a perfect regulator, nor as fulfilling fully the requisites of such a regulator.

X Q. 106. In point of fact the valve proved a failure, did it not?

A. 106. That I do not know. I remember at the time it was tried it was for some cause dropped, and I felt a little piqued by no reason being assigned to me, although I had no claims to demand such explanation, and consequently did not ask any questions.

X Q. 107. Did this valve fulfill what was expected of it?

A. 107. My impression is it did fully and was far in advance of those previously tried.

X Q. 108. Will you please explain why, at a time when
111 Lane & Bodley were in an embarrassing position on account of the lack of a proper regulator for elevators erected and

your pleasant relations with Col. Lane dictated the voluntary suggestion of a new plan of regulator, you suggested to them a regulator which you knew to be imperfect and not fulfilling the conditions of a perfect regulator, and reconcile this with your claim to having previously solved the problem of a perfect regulator, answering all conditions and perfected in every detail of structure?

A. 108. At that time I believed and have ever since that Lane & Bodley desired to have a regulator entirely their own, and, as I had previously stated that I had a plan of my own which would fulfill the conditions and it was not asked for, I did the next best thing, in my judgment, by the suggestions made.

X Q. 109. Your answer would imply that prior to making the sketch of February 15, 1872, "Exhibit No. 2," you had informed Lane & Bodley of your alleged previous invention. When, where, to whom, and under what circumstances did you make this disclosure? And give the details of what was said or done.

A. 109. Early in my engagement with Lane & Bodley I had stated in general terms to Col. Lane that I had devised a valve which, in my judgment, would fulfill all the requirements; but not meeting with encouragement to go into details, I did not, and received the impression stated above, to wit, that Lane & Bodley desired a valve of their own. The precise time and place I am unable to give, as there were almost daily interviews between Col. Lane and myself in the drawing-room.

(Objection.—The above statement of the witness as to his impressions is objected to as irrelevant and immaterial and not responsive to the question.)

112 X Q. 110. Please state, as nearly as you can, the details of the first disclosure made by you to Lane & Bodley of the invention in controversy.

A. 110. Shortly prior to the date of "Exhibit No. 4, defendant," Col. Lane opened up the subject of my device by asking me for the details thereof and suggesting the trial of the same. I agreed to bring my sketches from home on the following morning, which I did, and explained them to Col. Lane, and was instructed to proceed with the drawings. During the drawing of "Exhibit No. 4" Col. Lane objected to serrated devices, as, in his judgment, infringing upon the Judson governor patent, and directed me to substitute some other device, which was coneing the ends of the valve plunger and flaring the seat of the supply valve. The valve built on this plan proved unsatisfactory in the graduating device, and the serrated members of the original sketch were supplied in the next drawing from which valves were made.

At this point the further taking of this deposition was adjourned until Wednesday, March 24, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public.

CINCINNATI, O., *March* 24, 1886.

Pursuant to the above adjournment, the further taking of this deposition was resumed at this day.

Cross-examination of Col. LOCKE continued by Maj. L. M. HOSEA:

X Q. 111. You have stated that you did not consider any experimental models necessary in connection with your invention. Why did you not?

A. 111. Because on careful examination of the plan I was satisfied that it would fulfill the conditions I wished to be complied with. This being satisfied with designs without experimental
113 models is the constant experience of engineers in the construction of both large and small works

X Q. 112. Are we to understand by this that you regarded the invention as complete and perfect, and as requiring no practical trials to determine its successful operation?

A. 112. I was entirely satisfied as to its entire practicability.

X Q. 113. Did you make the drawings, "Exhibit No. 4," directly from the drawings which you had prepared at home?

A. 113. It was made from the sketches which I had prepared at home, excepting so far as changing from the serrated device, as before described.

X Q. 114. My question is: whether "Exhibit No. 4" was made directly from those drawings, or whether you made other free-hand or other sketches from which the final drawings, "Exhibit No. 4," were made?

A. 114. I cannot say on that point, as I may have made an intermediate sketch free-hand, or not have done so, on which intermediate free-hand sketch would be marked sizes for the particular case in hand. I speak of this in this way, as such a course is a very common practice with myself; and, furthermore, in the discussion of the matter with Col. Lane, other free-hand sketches may have been made, as I frequently used such method to more fully express my ideas when discussing a matter.

X Q. 115. When did you first discuss the matter with him and make such sketches, if such were made?

A. 115. I am not able to state the time of any discussions with regard to the valve, but do not think that any such sketches were made much prior to the time of the drawing of the "Exhibit No. 4"—that is, sketches in connection with conversations with Col. Lane.

X Q. 116. State the exact circumstances which led to omitting the serrated device.

A. 116. As I have already stated, it was on account of
114 directions from Col. Lane, he stating in substance that he thought the serrated device would be an infringement upon the Judson governor patent.

X Q. 117. When and in what connection did he make this statement? Detail the circumstances fully, stating the conversation which led to these instructions.

A. 117. It was during the time of making the drawing, "Exhibit No. 4," in the drawing-room of Lane & Bodley. The precise conversation and phraseology thereof I am unable to give, the sum and substance being that I was to leave off the serrated device and make the best substitute I could.

X Q. 118. What, then, is the meaning of the pencil-marks on "Exhibit 4," indicating the serrated device?

A. 118. I don't know anything about them.

X Q. 119. In bringing to Lane & Bodley your previously made sketches, what, if anything, was said by you to them with respect to the matter as an invention in which you claimed a personal right to ownership?

A. 119. The fact that I was solicited to bring the sketches from my house of itself rendered any discussion of such a point unnecessary, and the further manner in which it was indicated by the emphatic labeling of the drawings, Exhibits Nos. 4 and 5, "by the personal emblem of the large padlock, and the manner of designation of the device in conversations between Col. Lane and myself on the subject as the 'Locke valve.'"

X Q. 120. The above is ingenious as an argument, but is not responsive to my question, which is now repeated.

A. 120. I do not remember of any special conversation upon the point for reason first stated in the foregoing answer, any more than I should have asserted my right of ownership to instruments I had taken to Lane & Bodley's.

X Q. 121. You seem to drop into argument as naturally as Silas Wegg dropped into poetry. Will you please avoid this and
115 answer the question directly? Now, what did you say or do, if anything, with the intention of making known to Lane & Bodley any individual claim upon your part as against them of the device in controversy at that time?

A. 121. In the first place, I respectfully inform Maj. Hosea that I do not propose that he or any one else shall dictate the manner or shape of my answers in order to convey my meaning. The device and sketches, being my own personal property as much as any other personal property, I deemed as still being my property, in the full sense, after showing to them at their solicitation, and therefore, to the best of my knowledge and remembrance, no discussion upon my part was made at that time.

X Q. 122. In response to the foregoing notice the witness is informed that it is a fundamental rule, everywhere recognized and applied in legal examinations, that questions put by counsel are to be answered responsively, directly, and explicitly, and he is requested to observe this rule in the further examination.

Question. You speak of the manner of designating this device upon the office drawings. In what does the designation of these drawing- differs from that applied to other drawings made by you for Lane & Bodley?

A. In having the ground-work constituting a portion of the label—the drawing of a "padlock."

X Q. 123. As a matter of fact, did you not apply this device to all the drawings made by you after its adoption?

A. 123. No, sir.

X Q. 124. After the experimental failure of the bonnet valve did you not suggest other devices for a regulator before the "Exhibit No. 4" was made? And, if so, describe in detail what they were.

A. 124. In the first place, I am not aware that the bonnet valve, as it is termed, shown in Exhibit No. 2, defendant, did not do all that was claimed it would. I believe that, as suggested, the piston valve, as shown in sketch furnished by me in answer during
116 this cross-examination, was subsequent to at least the drawing, if not the experiment with the bonnet valve, and was prior to drawing Exhibit No. 4. The piston valve was discussed, with many minor modifications, the details of which I am not able to give.

X Q. 125. Did you not suggest one or more regulating devices during that period differing in structure and mode of operation from all of these?

A. 125. I am not able to answer that. I was giving a good deal of thought to the matter at that time, but all the details I do not remember.

X Q. 126. Do you mean that you were considering and devising new forms of regulating devices?

A. 126. I mean, as before stated, I was volunteering to help Messrs. Lane & Bodley out of their predicament they were in with regard to their hoister without a regulator.

X Q. 127. Do you remember your suggestion of and the discussion over a device embodying substantially two rotating and perforated water drums, in which the flow through the perforations was to be controlled by the progressive winding or unwinding of an external covering upon the drums? If so, please state the details of the proposed device and the date of its suggestion.

A. 127. I have a vague remembrance of there being a discussion of the control of the flow of water by a flexible substance like a flap over openings, the opening of the valve being controlled to a greater or less extent by a greater or less removal of the flap. This idea was modified with cylindrical seats and flat plane seats, the details of which I do not remember, nor do I the period of this discussion.

X Q. 128. This device was your suggestion, was it not?

A. 128. I am not positive with regard to that, whether it
117 was a suggestion of mine or not; it was subsequently ascertained that Mr. James L. Haven's establishment was experimenting independently on such a device.

X Q. 129. What steps were taken toward the embodiment of this suggestion? To what extent was the matter carried?

A. 129. I have no distinct recollections, but have only a general idea, and cannot state as to any drawings or other work being done in connection with it.

X Q. 130. Was it before or after making these suggestions of the bonnet valve, the piston valve, and the device last referred to that

you communicated to Col. Lane that fact—that you had already devised a regulator answering the conditions required?

A. 130. That fact was communicated before these.

X Q. 131. When and in what connection was it so communicated?

A. 131. During the earlier conversations between Col. Lane and myself on the general discussion of a hoister.

X Q. 132. Was it before you made the drawings for the disc valve, "Exhibit 1"?

A. 132. I think it was.

X Q. 133. Why do you think so?

A. 133. Because it was very early after my engagement, if it was not even prior thereto.

X Q. 134. Please fix and detail the date and circumstances of that communication.

A. 134. I am unable to do so any nearer than I have already stated.

X Q. 135. Are you positive that at or about the time of your employment you communicated to Col. Lane the fact above referred to?

A. 135. About that time I communicated the fact, but not the details of the construction or arrangement.

X Q. 136. What did you say to him in communicating the fact?

118 A. 136. I merely communicated in substance. The statement was that I had a plan I was confident would fulfill the requirements for a valve for a hydraulic hoister.

X Q. 137. When and where was that communication made?

A. 137. I am not able to state positively, but at the conversations which I had with Col. Lane were mostly, if not *at* all, at Bare, Shinkle & Howell's, Lane & Bodley's office, and Lane & Bodley's drawing-room, it is presumable it was at one of those places.

X Q. 138. Have you any positive recollection of making this communication?

A. 138. I have positive recollection of having done so, but not of the surrounding circumstances of exact place and time.

X Q. 139. Then you cannot say whether it was before or after your engagement?

A. 139. My impression is that the first mention was before.

X Q. 140. What did Col. Lane reply in response to your first suggestion on that point?

A. 140. What was his expression I do not remember, but the impression is distinct upon my mind that he took no particular interest therein or attached importance thereto, so far as I could judge.

X Q. 141. When, if at all, did you repeat this communication or the substance of it?

A. 141. I am unable to locate the precise times, but remember to have done so, and discontinued on account of receiving no encouragement to go into detail.

X Q. 142. Were these repeated communications before or after you volunteered the suggestion of the bonnet valve, "Exhibit No. 2"?

A. 142. Some, if not all, preceded that event.

X Q. 143. Can you locate in time, place, or circumstances any one of these communications?

A. 143. I have no date at my command by which I am
119 able to do so more accurately and exactly than already stated.

X Q. 144. Have you any positive or clear recollection of any circumstances which led to or were coincident with any one of these communications?

A. 144. I have no recollection of any collateral event that would enable me to fix the time and place.

X Q. 145. Coming down, then, to the time when you were, as you state, requested to bring your drawings, state in detail the circumstances of that request, including time, place, and details of the conversations.

A. 145. This request was made during one of the conversations between Col. Lane and myself in the drawing-room of the Lane & Bodley Company, the precise words of which conversation I am unable to give, the substance being a request on Col. Lane's part for me to bring the sketches with me from my home on the following day, which was done by me, and upon further conversation Col. Lane decided to put one into practical use. This occurred a very short time prior to the date on Defendant's "Exhibit No. 4." The opening of this discussion as to bringing the drawing and all advances in the matter were made by Col. Lane.

X Q. 146. Please state, then, in detail what Col. Lane said in opening the discussion and what you said in reply, and detail the immediate circumstances leading to Col. Lane's action in so doing.

A. 146. I am unable to quote the language employed by Col. Lane or myself, but have already given the substance of the conversation. The circumstances which called forth the request from Col. Lane was the unsatisfactory action of the device that had been applied direct to hoisters and lack of confidence in the practical working of other plans that had been proposed. That such were the reasons as I considered them at the time. What other reasons, if any, Col. Lane may have had I had no knowledge of.

X Q. 147. Had you previously informed him that you had drawings of your invention at home?

120 A. 147. I had informed him that I had a device which, in my judgment, would accomplish the purpose, but as to what extent I had sketches of the same I do not know how far I may have told Col. Lane, but by that time Col. Lane was familiar with my habit of jotting things down in the form of sketches.

X Q. 148. This I understand to mean that you do not know whether you had or had not told him that you had sketches or drawings; is this what you mean?

A. 148. No; it means that I had not told Col. Lane in detail what sketches I had; probabilities are that I mentioned sketches.

X Q. 149. Have you any distinct recollection on this point; if so, what is it?

A. 149. I have distinct recollection of having stated, in sub-

stance, that I had a plan, conveying thereby the idea of having sketches, but cannot positively state that I used the words sketches or drawings.

X Q. 150. You speak of your habit of jotting down; is it not the fact that it was at that time your habit to keep accurate memoranda in the form of a diary of the daily happenings; and, if so, why have you not produced such memoranda in connection with your testimony?

A. 150. Such has been my habit—that is, of keeping a diary, and much of the data, dates, etc., in my testimony has been taken therefrom to refresh my memory, and I stand prepared with photographs of the pages of the diaries so referred to, and would be pleased to place them in evidence, with the privilege to Maj. Hosea and the notary to compare said photographic copies with the original diaries. The objections to my placing the originals as a portion of this record are my inability to recover the same and liability to injustices to others, on account of memorandum therein relating to their business and the less to myself of original entries referring to other matters of business of my own. The diary of 1871 I am unable to place my hands upon, not knowing whether it is at Salt Lake with other
121 property that I have or lost with other things left stored away when I went West in 1874, and during my absence West were moved three times on account of change of landlord in the building where they were stored, and large quantities of which things were stolen. I have made and am still making efforts to find the diary, and have some hopes of success, as I have succeeded in finding, the present month, some of the property that had been missing for over ten years. One other diary was inadvertently left at the Carlisle house, and which diary Col. Lane kindly made efforts to recover for me, as shown in a letter hereto attached. Another diary, or sketch book, rather—it would be termed, I suppose, a diary—was left at Lane & Bodley's in order that they could copy therefrom matter in which they took an interest, which book I never recovered, which fact I have never attributed to the fault of the officers of Lane & Bodley, but to carelessness of some one in the drawing-room. This sketch book is referred to in a letter from Col. Lane, dated Cincinnati, July 19, 1875, at bottom of second page, wherein is said: "Bauer is now at Springfield. We will ascertain what became of your sketch book and mail it to you." This letter is also put in evidence. The effort to recover this sketch book was also unsuccessful. I have been thus circumstantial so as to clearly indicate the reason that on some points I am exact as to dates, etc., whilst in other cases I have necessarily confined myself to limits within which I have a clear recollection.

(Objection by defendant's attorney.)

The foregoing answer is objected to as irrelevant and immaterial, excepting so far as relates to the diary or memoranda of 1871.

X Q. 151. Who were present at either of the occasions when you communicated to Col. Lane the fact that you had previously devised the regulator in controversy?

A. 151. I do not know of any one, as our conversations
122 were mostly in the drawing-room, and until the fall of 1872 no one was employed therein excepting myself, and the conversations preceding my engagement were between Col. Lane and myself.

X Q. 152. Who was present at the interview in which he requested you to bring your drawings from home?

A. 152. I know of no other one being present than Col. Lane and myself.

X Q. 153. You have designated the bonnet valve, the piston valve, and the flap device as having been suggested or brought to the notice of the firm by yourself, and the disc valve as having been originally suggested by Col. Lane. Were there any other plans for a regulator suggested and considered up to the first introduction of the present piston valve? If so, who suggested them and what were the devices suggested?

A. 153. I would first qualify with regard to the flap valve. I do not know—am not positive—that this was my suggestion; on this point my recollection is not clear. There had been tried previous to the disc valve, as before described, globe valves and Ludlow, or gate, valves. There were a number of suggestions in regard to valves, of which I do not remember the details or the time, some of them being discussed subsequent to the introduction of the device under litigation, and some of the valves discussed were for the purpose of an hydraulic engine for actuating the bellows of a church organ. I am unable to state who suggested these devices, of which I have no clear recollection of the devices themselves.

X Q. 154. What church organ do you refer to and what was adopted for the purpose?

A. 154. For the Baptist church on the north side of Ninth street, between Plum and Central avenue, Cincinnati, Ohio. I do not know if the engine was ever built or not.

123 X Q. 155. How many hoisters did the firm build from the time of your employment in November, 1871, up to the first introduction of the present piston valve?

A. 155. I do not know.

X Q. 156. State generally your recollection of the fact.

A. 156. I have no definite idea. Two existed that I know of—the one at Bare, Shinkle & Howell's, one at the gas company; what others I cannot say.

X Q. 157. Apart from the valve constructions, your first work with Lane & Bodley was the designing of a balance chain for hydraulic hoisters, was it not?

A. 157. I cannot say whether that was the first or not. It was among the early things.

X Q. 158. Please examine the book here shown you and state what the same is and whether the entries generally upon the first 172 pages were made by you; if so, whether the dates interspersed throughout said entries are correct as to the matters indicated thereby.

Adjournment.—At this point the further taking of this deposition was adjourned until Thursday morning, March 25, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public.

MARCH 25, 1886.

Deposition resumed.

Cross-examination of Col. LOCKE continued:

A. 158. I have examined the book and find it to be a memorandum book that was in the drawing-room of Messrs. Lane & Bodley while I was there employed as draughtsman. The book was chiefly employed for keeping the results of calculations for hydraulic hoisters under discussion for erection. Other matters were at times interspersed and the entries were not made in chronological
124 order. The figures and many of the sketches were chiefly the results of work in blotter books. References will be found to number of said blotters and pages thereof. The entries and sketches in the portion of the book indicated were mostly made by myself. The book was furnished in the drawing-room some little time after my entrance therein and space was left blank in the fore portion of the book for transferring from blotters of an earlier date. The book was in no way intended as a diary, the matter being entered promiscuously and depending for ready reference by use of contents, a portion of which appears to be wanting.

Statement, defendant's attorney:

Counsel for defendant says: The book referred to is submitted to the examiner. It is offered in evidence and marked "Exhibit No. 7, defendant."

(Objection by plaintiff's attorney, because counsel for defendant, at this stage of the case, is not entitled to offer any evidence.)

X Q. 159. Many of the entries of this book appear to relate to plans and measurements taken at various places as data for the building and locating of hydraulic elevators. Please state, generally, whether you yourself made the measurements and observations embodied in these entries.

A. 159. As a rule, I did not. They were furnished to me as data upon which to determine the size of engine to be used.

X Q. 160. Can you designate the elevators on which the piston valve in controversy, "Exhibit No. 4," was first applied?

A. 160. I cannot.

X Q. 161. Would you be able to designate it by reference to the book "Exhibit No. 7"?

A. 161. I do not know whether I would or not, as I do not remember sufficiently the detail contents of said book.

125 X Q. 162. Please take the book, and in connection with the fact that the drawing Exhibit No. 4 is dated June 6,

1872, endeavor to answer the question number 160, this examination.

A. 162. So far as I have examined, and it has been with some care. I am unable so to do.

X Q. 163. What is your recollection about the time at which this valve was so applied as related to the date of "Exhibit No. 4"?

A. 163. I have no clear recollection as to the relative date of the drawing and the experiment of a valve constructed in accordance therewith, but think it was subsequent to the date of the drawing.

X Q. 164. And prior to the date of Exhibit No. 5, was it not?

A. 164. The probabilities are that such was the fact, although I cannot positively state it.

X Q. 165. You have already stated, have you not, that the complete valve, "Exhibit No. 5," was applied in all hoisters erected after its introduction, at least in substance? If you have not so stated was not this the fact?

A. 165. Such I believe to be the fact. Furthermore, some of the earlier constructed valves were replaced by ones in accordance with plans of valve now under discussion—that is, plans of "Exhibit No. 5."

X Q. 166. About how many valves were so made by the firm during your employment with them?

A. 166. That I am unable to state.

X Q. 167. You had personal cognizance of all the elevators constructed during that time, had you not?

A. 167. I presume that I had such knowledge while I was in the drawing-room. This is from November, 1871, until the latter part of February, 1874.

X Q. 168. Did you or not, after February, 1874, have cognizance of the use of this valve in hoisters by Lane & Bodley?

A. 168. Not until the summer of 1884, excepting by
126 inference from conversation with Col. Lane in 1875 and 1876.

X Q. 169. Did you not personally procure, influence, or have cognizance of orders for hoisters for parties West, which hoisters were constructed by Lane & Bodley and provided with the valve in controversy during the period referred to, from 1874 to 1884?

A. 169. As supervising engineer of the Horn Silver Smelting Company, I ordered, or caused to be ordered, in 1880 or 1881, a direct-acting hydraulic hoister from Lane & Bodley, which hoister was not, nor has it been, as far as I know, unpacked, it not having been erected as late as the spring of 1884. The superintendent of the smelter of the said company reported its arrival. I also audited the account and probably remitted the payment for the same, but, as before indicated, I have never seen the machine itself.

X Q. 170. Are you willing to swear that you did not know that the elevator last refered to was provided with a regulating valve such as that now in controversy?

A. 170. I regard the question as a gratuitous insult, the gentleman knowing that I am giving evidence under oath, and I shall make no further answer to the question.

DEFENDANT'S ATTORNEY: The view which the witness takes of the above question is quite unfounded, and he is assured that he is mistaken in supposing counsel to be influenced by any other motive than a proper desire to perform a necessary duty in the least offensive manner. As the prime object of this cross-examination, as may be frankly stated, is to test the truthfulness and accuracy of recollection, it is not a gratuitous act to ask questions in the nature of cross-question 170, but it is strictly in the line of legitimate examination. With this explanation to *to* the witness, the question is repeated, substituting "testify" for "swear" therein.

A. 171. Not having seen the elevator, I could not testify
127 one way or other as to its having or not having such a regulating device.

X Q. 172. Your answer is not responsive. Will you please give me an explicit and direct answer to cross-question 170, as modified?

A. 172. I simply repeat my preceding answer.

X Q. 173. You will observe that cross-question 170 does not limit you as to sources of information. Will you please state whether you knew or believed, at the time that this elevator was received, that it was furnished with a valve such as that in controversy?

A. 173. The question 170, modified, implies as to positive knowledge—at least that is the interpretation I place upon it—not what I might think or infer. My impression was that it would have such a regulator, and I would have expected, had I examined it, to have found such a one.

X Q. 174. What have you to say as to still another elevator ordered through or by you of Lane & Bodley, and erected under your supervision at Salt Lake City? Did this elevator have on it the valve in controversy?

A. 174. No such elevator was ever ordered through me or by me or erected under my supervision.

X Q. 175. Have you any knowledge of a Lane & Bodley elevator having been erected at Salt Lake City?

A. 175. At the "Walker House" hotel, Salt Lake City, there was, and I presume is still, an hydraulic elevator labeled as built by "W. H. H. Bowers, of Salt Lake," which elevator, after its erection, I learned through Mr. Bowers that it was built by Lane & Bodley, and my only connection with the matter was subsequently to render such assistance to Lane & Bodley as was in my power in their attempt to collect the pay of it, and, I believe, of another one, but I am not positive, erected by said Bowers at the "Zion Coöperative Mercantile Institution." The latter apparatus I have never seen.

128 X Q. 176. State whether the "Walker House" elevator was provided with the regulator in controversy, and when it was erected.

A. 176. My impression is that the Walker House elevator is provided with such regulator, although I do not remember to have specially examined it. The time of its erection I am not able to give, but being somewhere, I think, between 1877 and 1880. This I cannot positively state.

X Q. 177. Have you knowledge of any other elevator than those above mentioned erected in western localities during the period of 1874 to 1884?

A. 177. There were two direct-acting elevators at Geist smelting works, at Pueblo, Colorado. These elevators Mr. August Raht, superintendent of the Horn Silver Smelting Company, informed me were built by Lane & Bodley. I think Mr. Geist also told me the same. There was another elevator in Salt Lake, at F. Aubach & Bros.' dry-goods store, which I am under the impression was a compound hydraulic. By whom it was erected I do not know, but have the impression that its was also erected by Bowers. Those that I have enumerated I believe to be all there were in Salt Lake, the others being all that I know of at other points.

X Q. 178. Your statement, if correctly understood, is that the first knowledge Col. Lane obtained as to your proposed construction of a regulator was from the drawings which you brought from home. Is this correct?

A. 178. This is correct.

X Q. 179. Now, when was it that he objected, as you state, to the serrated devices—was it while you were exhibiting your drawings to him?

A. 179. It was during the progress of the drawing of Exhibit No. 4, defendant, and consequently subsequent to the first exhibit of the sketches to Col. Lane.

X Q. 180. Explain how attention was called to the serrating devices. Had you begun to make them as part of the drawing?

129 A. 180. The exact stage of the drawing at that time I do not remember. I remember the impression on my mind being that Col. Lane had been looking the subject up—that is, the subject of the Judson governor in connection with the serrated device.

X Q. 181. In your direct examination you state that you "removed" the serrated graduating device under the directions of Col. Lane, and your statement conveys the impression that you had already placed it upon the drawing and afterward removed it. Is this the fact? I mean, does the fact accord with the impression conveyed?

A. 181. The discussion of the drawings, modifications, etc., were whilst the drawing was in pencil, and the removal and alterations were made prior to the drawing being inked. I would further state that I cannot positively state whether the removal or omission was by actual rubbing out of pencil lines or by removal by instructions based upon their existence in the sketch.

X Q. 182. How many and of what character were the sketches which you brought from home and exhibited to Col. Lane?

A. 182. To the best of my recollection, there was a general section and detail sketches of the several parts, such as were necessary to understand the principle and mode of construction of the valve. The number of figures I do not remember.

X Q. 183. How many sheets were there, and on what size and kind of paper, and were the drawings in ink or pencil?

A. 183. I think they were on foolscap, with day-book ruling. The sketches were free hand and, I think, inked. There were two or three sheets—I think but two.

X Q. 184. To whom else did you exhibit these drawings?

A. 184. I do not know as I exhibited them to any other per-
130 son, excepting, probably, to my brother. Others may have seen them after I had taken them to the drawing-room of Lane & Bodley.

X Q. 185. What became of them afterwards?

A. 185. They were taken to my home and probably lost with other papers during my absence in the West, although they may possibly be among some papers taken West.

X Q. 186. Did you interpose any objection to removing the serrated devices; if so, what did you say about it?

A. 187. What words I may have expressed I do not know, but it was against my judgment and I so expressed myself.

X Q. 187. Detail the circumstances under which the serrated graduations were restored, what conversations, if any, you had with Col. Lane on the subject, and what observations, if any, you made upon the action of the valves as first built.

A. 187. The valve built in accordance with Exhibit No. 4 was defective in graduating effect, and the restoration of the serrated device was decided upon. The precise conversation upon the subject I am unable to detail.

X Q. 188. The foregoing answer not being responsive to the question, the question is repeated.

A. 188. I am unable to go into the minute details under which the conclusion was arrived at; having arrived at the conclusion, the minutiæ of conversation, etc., passed from my recollection.

X Q. 189. You state that you prepared drawings and made a model of this device in 1873 for the Patent Office. Did you inform any of the parties concerned of your intention to apply for a patent?

A. 189. I do not remember of any formal notification, nor did I regard it necessary so to do any more than in any other of my private business; furthermore, in this case I had not anything to lead me to think that my rights—full possession to invention—were other than fully recognized and admitted.

X Q. 190. You knew during the time of your employ-
131 ment there that the firm were building elevators in considerable numbers and using this valve on all, did you not?

A. 190. I did.

X Q. 191. Did you at the time of bringing your drawings there give notice of your personal claim or make any conditions or contract relating to the use of the valve by the firm?

A. 191. They were brought there upon the solicitation of Col. Lane and not brought there and offered by me, and no proposition was made in regard to their use by either party.

X Q. 192. And they continued to use the valve during the entire period of your employment there without any proposition, suggestion, or objection by you, did they not?

A. 192. None were made by me, I feeling that an equitable adjustment could be made when the full practical value of the valve was demonstrated, and that the scope of the claims of a patent when obtained would largely determine the value, and that it was desirable to delay the application as long as the law allowed for the purpose of experience with the valve and to lengthen the life of the patent to as distant a date as possible, and that there was no inclination on the part of Lane & Bodley to put up any claim against my rights, and that the matter was tacitly understood between us.

X Q. 193. When did you first begin the preparation of your drawing and model for the Patent Office? To whom was the fact of your being so employed made known?

A. 193. I began in the summer or fall of 1873. I do not know to whom the matter may have been known, as I took no particular care to inform nor conceal the fact from any one. I had communication and consultation professionally with George H. Knight, patent agent, of this city.

X Q. 194. Who were present in the drawing-room during any of the preparations to which you refer?

132 A. 194. Probably Mr. A. E. Watkins, the work being done after I was through with my regular hours of work for the day.

X Q. 195. Can you mention the name of any person connected with the establishment who saw you so engaged and to whom the nature of your employment was in any way made known?

A. 195. I am not aware who may and who may not have been acquainted with the fact, and cannot positively name any one, excepting a pattern-maker by the name of Schmidt, who allowed me the use of his tools when making the patterns for the model.

X Q. 196. Mr. Bauer was employed in the drawing-room from and after October 28, 1873. Was he made aware of your intention to apply for a patent and your preparations therefor?

A. 196. I do not know.

X Q. 197. Did he see you working after hours on your drawing or model?

A. 197. I cannot say, not knowing.

X Q. 198. You state that in April, 1875, Col. Lane broached to you the subject of your pending patent, and that you agreed with him upon a royalty. When, where, and under what circumstances did that conversation take place? What led to it? Who were present? What was said?

A. 198. That was on, I think, a Saturday—I think it was April 10, 1875—preceding my departure with my family to the West. That was my last conversation with Col. Lane before leaving the city for the West. This occurred just in the office of Lane & Bodley, close to the door. I had called to pay my respects to Col. Lane prior to my departure to the West. It was abrupt upon Col. Lane's part, entirely distinct from any conversation we had had, our conversation having been simply a social one, such as would be natural under the circumstances, and the broaching the subject just as I was about to leave—really standing, as was the Colonel also—was a

surprise to me and made a very vivid impression. I do not
133 remember who all were present in the office at the time. Col. Lane asked me the question as to the royalty they were to be called upon to pay. I answered twenty-five ($25.00) dollars a valve, he in substance replying that was satisfactory when I had obtained a good patent. Of this conversation I have not attempted to give the exact words, but only the substance thereof. We then pleasantly parted, I leaving the office.

X Q. 199. Who else heard this conversation?

A. 199. I am not able to state. The usual persons connected with the office were therein, so far as I remember.

X Q. 200. I observe that your application for a patent was filed in May, 1874; you were West at this time, were you not?

A. 200. Yes, sir.

X Q. 201. You state that in May, 1876, you followed Col. Lane to Philadelphia, after having seen him in Cincinnati, and talked with him in relation to the valve matter; state fully and in detail the circumstances, the reasons which lead you to follow him to Philadelphia, the time, place, and circumstances under which the conversation took place, who was present, and what was said.

A. 201. The patent having been granted, I desired to put the business matter relating thereto between Lane & Bodley and myself into definite shape, and being anxious to expedite the business, and having business in New York, and conceiving that Col. Lane would be more at leisure than at Cincinnati, I took the trip to Philadelphia on my way to New York, and in the evening at the hotel attempted the discussion of the business relating to the valve. Col. Lane was evasive at first, and then informed me that he was away from home for relaxation, recreation, or rest, or something of that sort, accompanied by a part of his family, and therefore declined discussion of business matters. This was done in a courteous manner, and I felt from the very nature it would be in bad taste, if not discourteous, for me to press the subject, and left the same
134 night for New York. I have attempted to give the spirit of the matter, and am not able to detail the conversation in full. The business part of our conversation was between ourselves, there being no third party present.

X Q. 202. When did you next introduce the subject of the valve to Col. Lane?

A. 202. In August, 1884.

X Q. 203. You saw Col. Lane frequently during that interval, did you not?

A. 203. I saw Col. Lane on various occasions when on visits from the West to Cincinnati.

X Q. 204. You also were in correspondence during that period, were you not?

A. 204. More or less, but mainly with the house of Lane & Bodley.

At this point the further taking of this deposition was adjourned until Friday, March 26, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public.

CINCINNATI, *March* 26.

The taking of deposition resumed.

Cross-examination of Col. LOCKE continued:

X Q. 205. Did you in any of your letters to Lane & Bodley refer to the matter of the valve and ask for any recognition or adjustment of your claim?

A. 205. I did not, for the reason I had the impression in my mind, from the interview with Col. Lane at Philadelphia, that Lane & Bodley were not inclined to fulfill promptly the verbal understanding of the preceding year, or, at least, would attempt to open up negotiations for more favorable terms, and I did not deem it prudent to open up the matter until I was in a position as for time and means to carry forward claims to my rights, which conditions I was in hope would occur from time to time, but such con-
135 ditions, in my judgment, were not realized at an earlier date than 1884.

X Q. 206. State what was said by Col. Lane, at Philadelphia, which gave you the impression stated, and also state fully what you mean by the assertion that you "did not deem it prudent to open up negotiations."

A. 207. The exact words of the conversation between Col. Lane and myself I am unable to repeat, but the impression then made I distinctly remember of being a disposition to evade the discussion, which, taken in connection with the drawing my attention to the visit of Mr. Vaughn and also to his patent at previous interview in Cincinnati, I regarded as preliminary step—what might be called skirmishing—before opening up the main subject of settlement with regard to my claims for the valve; and I did not deem it prudent to open up negotiations for the settlement, as my engagements in the West did not leave me at liberty as to time for their proper prosecution, nor had I in reserve the funds necessary to meet my family expenses and my own, besides other incidental expenses that might possibly be called for during such discussion or legal enforcement of my right.

X Q. 207. If, as you have before stated, you did not know that Lane & Bodley were making the valve in controversy from 1874 to 1884, what need was there for any negotiations on the subject?

A. 207. There was the questions of the valves made prior to 1874 and those that may have been made at a subsequent date.

X Q. 208. When you filed your bill in the present case you made oath to the allegation, in substance, that Lane & Bodley were making the said valve without consent or allowance upon your part and in violation of your notice and request to them to desist. Upon what facts, if any, did you make such oath?

A 208. Before answering the question I request Maj. Hosea to read to me the paper referred to.

136 X Q. 209. Did you or not make allegations to this effect in bringing the present suit?

A. 209. I prefer waiting until the preceding request is complied with and the answer made.

X Q. 210. Did you, in fact, at the time of bringing this suit know that the Lane & Bodley Company were making the valve in question and did you make demand upon them to cease?

A. 210. In August, 1884, I saw valves in the shop of the Lane & Bodley Company in course of construction, and in the same month, when I attempted to open up the subject of the valves in question in conversation with Col. Lane, he flatly refused to discuss the subject at all. The foregoing statement is the last positive knowledge I have upon the subject.

X Q. 211. The latter half of the preceding question is repeated and the witness requested to answer explicitly.

A. 211. No further than implied by attempting to open up the discussion which was so summarily closed by Col. Lane refusing to discuss this matter in our last conversation.

X Q. 212. The bill—a copy of your bill being now present—(counsel now reads to witness those clauses of the same relating to the substance of cross-question 208, beginning at the middle of page 4 of the court copy and ending at the middle of page 6 of same).

Now, will you please answer why if at the time of filing this bill you, upon your information and belief, knew that the Lane & Bodley Company had been making the valve in question ever since December 1, 1876, you testify upon the present record you do not know the fact to be so?

A. 212. I have made no statement in this deposition that I was not aware at the time of filing this bill that the valves had been manufactured by the Lane & Bodley Company during the period from December 1, 1876, to 1884, but I have stated that during that period I did not know whether they were manufactured by
137 them or not, but about the time, and after my conversation with Col. Lane, in August, 1884, and before the filing of the bill I had informed myself upon the facts, from which I believed that the valves had been manufactured by Lane & Bodley or their successor, the Lane & Bodley Company, during the period specified.

X Q 213. How did you inform yourself; what steps did you take, and what did you ascertain which you did not know before?

A. 213. I asked Dolph, who was in the office of the Lane & Bodley Company, in regard to hoisters and valves. He gave me the number of elevators that was on the list of hydraulic hoisters manufactured by Lane & Bodley, stating that there was two or three not yet entered on the list in the office, which list I saw, and the few which were not on the list Dolph stated were those they had recently made. He also informed me that the Lane & Bodley Company had sold a number of valves to other manufacturers, and Mr. H. M. Lane, employed at the warehouse, informed me that they had been continuously manufacturing the valves since the time he had been about there. I had also seen, on the day of the last conversation with Col. Lane, in August, a valve at the Mitchell & Tranter Siemens steel plant, Covington, Ky., at which works I was told said valve was from the manufactory of the Lane & Bodley Company. From the memoranda I now have, and made at the time, by refreshing my memory, there was on the list above referred to two

hundred and fifty-three (253) hydraulic hoisters, and Dolph stated that about twelve (12) more of recent construction were to be added.

X Q. 214. Please state the facts as to the salary paid you during your employment up to 1874, and subsequently, by Lane & Bodley; give, in brief, a general statement of the rate paid, with the successive increases.

A. 214. I cannot state positively, but my impressions are that upon my first entry the salary was at the rate of between
138 $1,200 and $1,800 per annum. The renewal of engagement in October, 1873—it could be called the third engagement—was at the rate of $2,000 per annum. I use the word rate probably somewhat improperly, as the payments were made weekly, although the engagement was by the year. The various services rendered Lane & Bodley after 1874 and to 1880 were without remuneration or contract for any, and were mere mainly in the form of courtesies and without any expectation of monetary return. Some of the transactions were based upon mutual benefits. In 1880 arrangements were entered into between the Lane & Bodley Company and myself in which I was to give them my time, or portions thereof, at the rate of $200 per month and expenses, and an allowance of $20 per month for their portion of the use of my office in Salt Lake City, for the purposes of a branch office of the Lane & Bodley Company, they having the right of desk room for any other representative of themselves than myself at said office. Subsequently I had my office rent reduced, and thereupon very properly notified them that their proportion would be reduced, which reduction was to $15.

X Q. 215. Did your original sketches of the valve in question show what you term "a dash-pot" arrangement?

A. 215. There was no dash-pot arrangement at any time connected with it, nor have I described any such thing as connected with it, either as completed or on the sketch.

X Q. 216. In the Rankine device you say that the upper plunger F is not a balancing piston. What have you to say as to the piston L in the regulator employed to control the flow of water into the space G?

A. 216. In the first place, I do not speak in my testimony of F as a plunger, but as a piston, as stated by the author, said piston being subject to pressure at times from above. In Fig. 41, Rankine's work, it is clearly seen, in connection with the description, that the author distinctly states: "L is a plunger of the same size with K, and fixed to the same rod, in order that the pressure of the water in the space between K and L may not tend to move the
139 piston valve K upwards or downwards, but in speaking of the piston F the pressure of the water between E and F tends to raise them both. The upper side of F is provided, if necessary, with a rod or trunk (that is, a hollow piston rod) passing through a stuffing box in the top of the valve cylinder. The use of this is to diminish the effective area of the upper side of F, so that it shall not be more than is requisite to enable the pressure of the water, when admitted through the port I into the space above F, to over-

come the friction of the piston valve and its appendages, together with the excess of the pressure on the lower side of F above the effective pressure on E. The sectional area of this rod or trunk, therefore, should be about as much less than the area of E as the area of E is less than the whole area of F. H is the supply pipe and M the discharge pipe of the part of the valve cylinder above the counter-piston, which, with its cylinder, forms an auxiliary engine to work the valve of the principal engine."

From the above quotation it is evident that L prevents any action of water upon or above the upper end of said "plunger L" and makes this "plunger L" a balance to the valve K, whilst, in regard to "counter-piston F," with its cylinder, forms an auxiliary engine to work the valves of the principal engine.

At this point the further taking of this deposition was adjourned until Monday, March 29, 1886.

J. E. STEVENSON,
Notary Public, Ham. Co., Ohio.

By consent the further taking of this deposition was adjourned until Monday, April 5, at 10 o'clock a. m., at which time, pursuant to said adjournment, the further taking of testimony was resumed.

140 Redirect examination of Col. LOCKE by Hon. T. A. LOGAN:

Q. 1. You have stated, substantially, that you took to the factory, at the request of Col. Lane, your previous sketches of your valve and submitted them to him. Did you insist to him, substantially, that the device therein shown should be adopted or rejected by them; and, if not, why not?

(Objected to as irrelevant and immaterial.)

A. 1. I at no time urged upon Lane & Bodley the adoption of my plan, as the sketches were taken to them at the solicitation of Col. Lane, and I regarded my rights as fully acknowledged by them and asserted by me, as the drawings made from the sketches were and are strongly marked by the family emblem of a padlock forming a portion of the title of said drawings. The sketches showed the device complete, as used from that time forward. No experiments were made with a view to further development of the plan. Only one change was attempted, of which I had knowledge at the time, and it proved a failure and had to be abandoned. I refer to the attempt at a substitute for the original serrated device.

(Objection.—The answer following second line objected to as not responsive and as irrelevant.)

Q. 2. At the time of this last-named attempt, which, as I understand, was made at the instance of Col. Lane, what did you understand to be the status of the device? Did you understand that Col. Lane had tacitly adopted your device, which gave him a right to dictate, and the attempt to change the serrations was dictated by him because of this adoption, or did you understand that it was not yet

adopted and the change in the serration was proposed as an improvement which might lead to its adoption?

141 A. 2. I regarded this experiment of a detail as not affecting the question of acceptance or non-acceptance and as not called for, but simply an attempt to evade a supposed objection. The method employed as a substitute, I think, was my own, at the suggestion or request of Col. Lane to substitute something for the serrations, in order to remove from his mind a minor objection to its adoption. There was no formal adoption but the natural continuance of its use after the successful result from the valve built in accordance with the original sketches, as shown in Exhibits Nos. 5 and 6 of the defendant, and on which my rights were acknowledged by them and asserted by me, as stated in the previous answer.

Q. 3. Did you or did you not at any time regard the experiments which were being made by Col. Lane as an effort on his part to get a device which, if gotten, would belong to him or be an infringement of your own?

(Objection.—Objected to as leading and suggestive.)

A. 3. I regarded the experiments as a desire on his part to get a device of which he would have the absolute control, but which, if successful, would in no way infringe upon my device as subsequently patented by me.

Q. 4. You have been asked substantially why you did not inform Col. Lane of your application for the procurement of a patent. Please state in detail why you did not do so.

A. 4. There was no necessity for me to do so. Furthermore, Col. Lane was aware of the fact, as shown by his asking me in April, 1875, what would be the royalty on the valve when I obtained a patent thereon.

(Objection.—Answer objected to as not responsive and irrelevant.)

Q. 5. Please explain why you did not write to Col. Lane from the West as to their use of your device when you had reason to suppose from the Horn Silver Company, the Bowers instances, that they were using it.

142 A. 5. I had no positive knowledge from the cases named, or from other sources, that they were using it, although I believed so, but was satisfied in my own mind that Lane & Bodley would endeavor to obtain more favorable terms than those of the verbal agreement of April, 1875, whenever the matter was brought up, and that the discussion would probably require me to take legal proceedings to maintain my rights; that my business required me to remain almost constantly west of the Rocky mountains; that I had neither the time nor the means at my command to enforce such a course; therefore I preferred to leave the matter in abeyance, as I regarded the verbal agreement of April, 1875, as fully protecting my rights.

Q. 6. Please explain more fully why it was you went to see Col. Lane in Philadelphia in 1876 to get an agreement when you already had the agreement of 1875 for $25 royalty.

A. 6. The agreement of 1875 was with a proviso of when I obtained a good patent, and prior to proceeding to Philadelphia the patent had been issued, and I desired to obtain the agreement in the form of a record without the condition of the proviso, but Col. Lane evaded the discussion, and I was obliged to return shortly to the West, and not having time at my command relied upon the verbal agreement as securing my rights until such time as I would have the time and means to follow the matter up.

Q. 7. You have been asked, substantially, why you continued your amicable relations with the company from the West after this evasion of Col. Lane in Philadelphia in 1876. It was also pointed out that you had not mentioned the matter to them from there. Please explain why this was so.

A. 7. I did not regard it as either right or prudent to have other than amicable relations with them so long as they had not actually refused to comply with the agreement of April, 1875. I did not write to them so as to bring up the issue, as I had neither
143 the time nor means at my command to enforce my rights in case of their refusal to comply with their agreement at that time.

Q. 8. Was your sojourn in the West a temporary one, or did you abandon your citizenship in Ohio?

A. 8. My residence in the West was a temporary one. I actively avoided acquiring citizenship there, so as to retain my citizenship in Ohio.

Q. 9. In referring to the Rankine device reference has been made to letter "*g*" of the drawing. Where does this letter appear? What part does it designate?

A. 9. This reference appears on page 32, line 5, and page 33, line 12, original direct examination, and on pages 16 and 17, type-writer copy thereof, and refers to the water space above the piston F being between the inner shell of the cylinder embracing F and the trunk attached to the upper surface of said piston F, the said space being for the purpose of supply pressure on the upper side of F as an auxiliary engine for moving the piston E. In the Rankine illustrations this space was not so lettered, but in the illustrations, Exhibits Nos. 7 and 8, from the two editions of Weisbach the space is so lettered; hence the error in so designating it.

Q. 10. In cross-question 110 you are requested to give the details of your interview with Col. Lane respecting your sketch, and they are given in your answer thereto. In giving said answer did you mean to be understood that that was the first occasion upon which the subject had been generally discussed between you?

A. 10. I did not mean to be so understood, but to be understood as stating that to be the first occasion on which the full details of the device was communicated to Col. Lane.

Q. 11. In question 19 in chief, in quoting from the letter of Col. Lane, October 28, 1873, counsel read it as though written "during the time you were in our employ," and comparison shows it should be "during the time your are in our employ." Have you made the comparison to see if the latter statement is correct?

144 A. 11. I have. The latter statement is correct, and my answer at the time was given with reference to the proper quotation.

JOSEPH M. LOCKE.

And thereupon complainant's counsel, having no further interrogatories to propound, rests his case.

Counsel for defendant gives notice that on Saturday, April 10, or as soon thereafter as he can be heard, he will apply to the court for leave to take further testimony on behalf of the defendants, in answer to the new matter introduced by the complainant on rebuttal.

145 Also THEODORE J. MCGOWAN, of lawful age, who, being first duly sworn and examined, deposes and says as follows:

Examination-in-chief.

Present: Hon. T. A. Logan, attorney for plaintiff; Maj. L. M. Hosea, attorney for defendant.

Examination by plaintiff's attorney:

Q. 1. State your name and residence.

A. 1. Theodore J. McGowan; Cincinnati.

Q. 2. What is your occupation and how long have you been engaged — it?

A. 2. I am a machinist; I have been in the business since 1850.

Q. 3. In the course of your business have you had your attention especially directed to the subject of cup-packing in relation

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Adjournment.—The further — of the deposition of Col. J. M. Lock was at this point, by consent, adjourned until Thursday, March 18, 1886, at 10 o'clock a. m.

In the meantime the examination of THEO. J. MCGOWAN was proceeded with, at 2 o'clock p. m., as follows:

Cross-examination by Maj. L. M. HOSEA, for the respondent:

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146 to its durability in pistons and other machinery where it was exposed to attrition, friction, and the action of water upon it reaching it through openings? If so, please state the effect produced thereby.

A. 3. Yes; I have had experience in cup packing for thirty-five years in cylinders of pumps and for valves and passing over holes which were perforated through the cylinders. In true, smooth cylinders my experience has been it will operate perfectly for from one to three years. We find in that time that the water acts on the packing leather and makes a difference in time in the amount of lime in it; the more lime in the water the more tannic acid is absorbed and the shorter the life of the packing. In 1873 I experimented with a leather packing passing over holes in a cylinder

which was to be used for a graduating valve in a water column. My first experiment proved the packing was seriously cut by passing over these holes while the leather was under pressure. The purpose for which I wished it used was only under six-pound pressure, and it answered the purpose for which I constructed it.

Q. 4. Will you be good enough to make a sketch upon the record showing the appearance usually presented by leather packings which have been subjected to such wear and tear as you have just referred to?

(Objection.—The question and the line of testimony indicated is objected to as irrelevant and immaterial.)

A. 4. This pencil sketch I make, No. 1, shows the plan of a packing in a smooth cylinder, which would be worn evenly all around until the cup would be entirely worn off. This is such as is used on pistons of pumps. No. 2 sketch shows the cup packing as it is worn in a cylinder where it passes over holes drilled through the walls or sides of the cylinder. This has been my experience in practice.

147 (Paper attached hereto, marked "Exhibit McGowan Sketch.")

Q. 5. Please examine the model, Plaintiff's Exhibit "Complainant's Model," and considering the device as a graduated valve to be used for the purposes of application to the modern hydraulic passenger elevator, state whether or not, in your opinion, the cup packing therein shown is substantially relieved from the incidents and results which, as you have just stated, attend the use of ordinary cup packing.

(Objection.—Objected to as irrelevant, immaterial, and without proper foundation.)

A. 5. The model I am examining shows the cup packing working in the cylinder at the lower part, I would call it, while the piston or top packing is reversed from the lower one, and the lower one is such as I have described and the upper one such as is used in hydraulic pumps and presses, and the lower packing, I find, would not be subject to wear and tear, as it would be if passing over holes in the cylinder; the lower packing being placed in the best possible position for durability, while the upper one is reversed, its effectiveness is no more inferior to the lower.

Q. 6. Your attention is now called to Exhibit No. 1, Locke deposition, and particularly to Figs. 3 and 4 thereof, wherein — illustrated the result of wear in cup leathers. Please state whether or not, in your experience, you have witnessed results from their use substantially similar to that shown.

(Objection.—The former objection is repeated.)

A. 6. Yes; these exhibits, 3 and 4, are in fact similar to my experience—Fig. 3 where the packing passed over holes bored in the cylinder, while Fig. 4 represents the effects of the packing in a smooth cylinder not having holes in the walls.

148 Q. 7. Please look at "Stanwood Exhibit No. 2." You are requested to observe the position of the cup packing therein shown with reference to the direction of flow of water from the inlet port, and you are asked whether or not, in your opinion, in practical operation the packing would serve its purpose effectually; and, if not, why not?

(Objection.—Same objection repeated.)

A. 7. It would not; the reason why, the upper packing is reversed and would not pack against the pressure, or, in other words, the upper packing is upside down, and the pressure from the inlet pipe would force by it and into the hydraulic cylinder or out of the outlet valve when it was upon its upward stroke.

Cross-examination waived by Maj. L. M. Hosea, attorney for defendant.

THEODORE J. McGOWAN.

The further taking of this deposition was adjourned by consent until March 18, 1886, at 10 o'clock a. m.

J. E. STEVENSON,
Notary Public, Hamilton Co., Ohio.

149 And afterwards, to wit, on the 7th day of December, A. D. 1886, the following depositions of P. P. Lane *et al.* were filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Depositions of P. P. Lane *et al.*

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150 United States Circuit Court, Southern District of Ohio.

JOSEPH M. LOCKE
vs.
THE LANE AND BODLEY COMPANY.

Stipulation and Statement of Facts.

The following statement of facts is, by stipulation of counsel, admitted as part of the defendant's record testimony without formal proof:

The firm of Lane & Bodley, consisting (in 1867, as testified by Anthony Schnier, witness for complainant) of P. P. Lane, Oliver Britt, Joseph T. Bodley, Samuel R. Smith, Edward Myers, and Anthony Schnier, continued until 1876, when, Joseph T. Bodley and Oliver Britt having deceased, the survivors, to wit, P. P. Lane, Anthony Schnier, Edward Meyers, and Samuel R. Smith, in March, 1876, entered into an agreement with each other and the representatives of the interests of Bodley & Britt providing in substance, among other things, as follows:

That said parties composing the firm of Lane & Bodley, carrying on business as machinists and founders at the said city of Cincinnati, were desirous of forming an incorporated company under the laws of the State of Ohio to carry on and operate the business of said firm.

That the name of said company should be The Lane & Bodley Company, with a capital stock of $375,000, divided into shares of $1,000 each.

That the business of said company should be the same as
151 that carried on and operated by the said firm of Lane & Bodley and be carried on in the same premises as those occupied by said firm.

That the entire property and assets of the said firm of Lane & Bodley should be transferred and conveyed into said company upon its incorporation, said company to assume the entire liabilities and obligations of the said firm of Lane & Bodley.

That the said parties were to be employed by said incorporated company at the same rate of salary and upon the same terms as they were when engaged as partners of said firm of Lane & Bodley for a certain period of years.

That the said company should be the owner of all contracts and patents owned and held by the said firm of Lane & Bodley upon the same terms and in the same manner as said firm owned and held the same, and that all of the rights held by said firm of Lane & Bodley under and by virtue of said firm's articles of partnership should vest in said company upon the same terms and to the same extent as held by said firm.

That the parties to the agreement were to receive of the stock of said company, at its par value as paid-up stock, an amount equal to their interest in said firm of Lane & Bodley, the stock to be divided among the said members of the firm of Lane & Bodley according to their interests in said firm in full and final settlement of said interest, and all property and assets of said firm conveyed to said company.

That thirty thousand ($30,000) dollars of the stock of said company, at its par value, should remain in the hands of said company for sale to its employés, to be paid for by them in annual installments of not less than ten per cent., the stock to be held by the company as security for said deferred payments until paid for, and no stock to be sold below par.

That said company was to have and enjoy all leases and rights in the premises held by the said Lane & Bodley.

That said firm of Lane & Bodley was to continue in exist-
152 ence after the incorporation of said company to close up the old business and make all necessary collections; all business thus closed and all collections thus made to become the property of the company.

In April, 1876, in pursuance of said agreement, the said individuals comprising the firm of Lane & Bodley and representatives of the interests of the deceased partners became incorporated as the Lane & Bodley Company, said agreement being in all respects carried out, and said company has continued the business theretofore conducted by said firm up to the present time and is still continuing the same at the same location.

At the date of incorporation 345 shares were held by the four partners, exclusive of the 30 shares reserved for sale to employés.

At date of suit 324 shares were held by 14 persons, 6 of whom were employés.

Total number of shares, 375.

THOS. A. LOGAN,
For Plaintiff.
L. M. HOSEA,
For Defendants.

153 United States Circuit Court, Southern District of Ohio.

JOSEPH M. LOCKE, Complainant,
vs.
THE LANE AND BODLEY COMPANY, Respondent. } No. 3708.

Depositions of sundry witnesses taken by consent before me, Matt. J. Day, a notary public within and for the county of Hamilton, in the State of Ohio, pursuant to an agreement of counsel, at the office of L. M. Hosea, Esq., rooms 65 and 66, Johnston buildings, Cincinnati, Ohio, on the 15th day of January 1886, to be read in evidence in behalf of the defendant in a cause pending in the United — circuit court, in which J. M. Locke is complainant and The Lane and Bodley Company is defendant.

Present: L. M. Hosea, on behalf of defendant, and T. A. Logan, on behalf of the complainant.

Testimony of Col P. P. Lane.

P. P. LANE, being duly cautioned and solemnly sworn, deposes and says as follows:

Examined by Mr. HOSEA:

Q. 1. State your name, age, residence, and occupation.

A. P. P. Lane; age, 65; residence, Norwood, Hamilton county, Ohio; occupation, manufacturer.

154 Q. 2. Please state how long you have known the complainant, J. M. Locke; when and under what circumstances you became acquainted with him.

A. My first acquaintance with Mr. Locke was in 1871, I think. I was thrown in contact with him by some business operations with his brother.

Q. 3. Please state what your business relations with the complainant, Locke, have been, when and under what circumstances they began, for what length of time they continued, and when they terminated.

A. The contract with and this relation with his brother induced him to make an application to the firm of Lane & Bodley for a situation as draftsman, and he was employed as draftsman, I think, in February, 1871, if I have the date right. I have a memoranda here of the date. It was November, 1871, I see, and his employment was continuous until February, 1874, under a continuous salary. Since that time he has been employed at times for special work as a mechanical engineer, but has not been continuously in our employ. That employment as mechanical engineer ceased, I think, some two years ago—between one and two years ago.

Q. 4. Please state the nature of the employment of Mr. Locke during the period of his continuous employment, from 1871 to 1874; state fully and in detail the nature of the services which he was employed to render you or your firm or company, and if there was any specific contract of employment will you state its nature and produce any documents which you may have which relate to or explain its nature? Give, in brief, as completely as you can a history of his employment and the nature thereof.

A. At the time of my first acquaintance with Col. Locke we were just commencing the building of hydraulic elevators. We had built two, one for Gould & Pierce, cotton spinners, and one for Shinkle & Kreis, or Shinkle, Howell & Kreis at that time. In my several conversations with Mr. Locke in regard to employment the matter of hydraulic elevators was often discussed, and some of the
155 troubles which we had experienced were talked about, and Col. Locke stated that he was very familiar with hydraulic machinery, and with the custom and practice of its use in foreign countries, and thought he could be of considerable advantage to us in that line of work. His employment was largely induced by his supposed knowledge of that branch of mechanics, but it was not supposed to be confined to any one branch, as we are manufacturers of a large number of different machines, but the special inducement for his employ was from his supposed knowledge that he had of hydraulics, especially as used with hydraulic elevators. The two machines we had built were entirely satisfactory in their action, with the exception of a very excessive water ram in the pipes, which was so severe as to endanger the safety of the pipes, and one of the first problems when he commenced his employ with us was the construction of a valve which would obviate the trouble of the water ram and make it convenient and adapted to the use to which we desired it. Col. Locke referred to quite a number of English works which treated very largely on that class of mechanics, some of which we had at that time in our library in the drafting-room, and we may have bought some others; I cannot recollect as to that. The

different devices were discussed, and the first valve we made after his employment was a disk valve; but, so far as I remember, the disk form of valve was not represented in these foreign works; but after having the various kinds of valves illustrated by sketches, I decided we would make a disk valve. The patterns were immediately put in hand and the valve completed and put to work. We found the valve satisfactory in every particular as far as obviating the water ram and convenience of working, but by continuous use we found that the mud and gritty water which we had here wore the surfaces so rapidly that we could not keep it tight for any great length of time, and we at once determined it would be necessary to abandon that form on account of wear caused by muddy water. We put some of the valves in
156 locations where the water was perfectly clear, and had no trouble with them. We then turned our attention to other forms of valves, and gave especial attention to a form that was represented in Rankine's mechanical work, and had been used in Europe for a long time and said to operate very satisfactorily. The Rankine valve required some modification to adapt it to our use, which was made in our drawing-room. The patterns were completed and the valve put in use. One of the features that was illustrated in the Rankine device Locke said was not necessary to make as represented. This was the graduating feature which was shown in the Rankine device. Locke proposed to leave that off and to make a conical-shaped end to the piston. In putting the valve in use we found a return of the old water-ram trouble, nearly as severe as the valve we had in use before Locke's employment. In considering the remedy for this trouble I told Locke that we must make the most complete arrangement that was possible to obviate the water ram, and not only use the suggestions found in the Rankine device, but to increase the graduation, so that when the water was finally shut off that it would have a stream almost as small as a needle. The Rankine device had slots in the end of the piston for the graduation, and the bottom of this slot was of considerable width; but in the change which we made we brought that slot into a diamond form, and where the water was entirely shut off it was brought to a complete point. This indication of the change was made upon the drawing by my instruction. I think the change was made by myself, with a pencil. I am not positive that I made the marks upon the drawing showing the change we must make, but I know I gave instructions that we must have it done. I will state that I am the president of the Lane & Bodley Company, which at that time was a partnership, and in fact my owning a controlling interest in the establishment gave me the right to dictate, which I did in regard to the drawings and executive work, both in the drawing-room and in the shop, and drawings were not con-
157 sidered to be finished and approved or ready to go into the work without my order. This change in the drawing in regard to the graduation was a positive order from me to Locke, without regard to his judgment or approval.

(By Mr. LOGAN:)

Q. 5. Explain what change you refer to—making the diamond-shaped point?

A. Yes, sir; the diamond-shape. This is about a representation of the drawing as I found it in the book, and this is the form we made. (Witness makes a pencil sketch, not preserved.)

(By Mr. LOGAN:)

Q. 6. Is that the change you are now speaking of?

A. Yes, sir.

(By Mr. HOSEA:)

Q. 7. In order to more fully answer the desire of counsel for complainant, I now introduce various drawings from the drawing-room of the Lane & Bodley Company and place before the witness, requesting him to designate them in the order of their dates, together with such explanations as may be necessary for their more complete understanding. These drawings are introduced as exhibits, numbered according to the order of their date, commencing with number one.

A. The drawing that I have in my hand, which is Exhibit No. 1, shows a drawing of the disk valve which I have spoken of; the drawing-room date is December 16, 1871, and the drawing is made by J. M. Locke.

Drawing, Exhibit No. 2, was made by J. M. Locke February 15th, 1872, and is a sketch of a piston valve largely embodying the features of the Rankine valve, which I have spoken of.

Drawing, Exhibit No. 3, seems to be a drawing for a valve gear to a hydraulic valve, made by J. M. Locke May 23rd, 1872.

Drawing, Exhibit No. 4, is also a drawing of a piston valve and the valve gear for operating it, drawn by J. M. Locke June
158 6th, 1872. The drawing of the valve represents the piston valve with some little modifications of the drawing which I have formerly spoken of.

Q. 8. Will you please refer to and explain the pencil alterations made upon said drawing?

A. On the drawing of the piston valve, Exhibit No. 4, I discover traces of pencil marks illustrating the change necessary to reduce the water ram, which was afterwards elaborated and shown more distinctly in other drawings which were made later, and which was finally adopted and is still in use in our practice of making a three-way hydraulic valve.

Q. 9. You have referred in your testimony to certain pencil suggestions. Are the pencil marks upon this drawing, Exhibit No. 4, those to which you have before referred?

A. They are. Drawing Exhibit No. 5 is also a piston three-way-balanced valve, of which I have been speaking, with more definite modifications of the graduating feature, which now seems to have assumed its form and has been drawn in with ink. The drawing was made in August, 1872.

Exhibit No. 6 is a tracing from the drawing Exhibit No. 5 and exhibits the same device, being simply a copy from Exhibit No. 5.

I would add here that the dates of these drawings may not be positively according to the time that the sketches were made, as it is often the case that sketches are made and patterns completed before the drawing is fully completed and the dates are made afterwards—some time after.

(By Mr. LOGAN:)

Q. 10. As I understand, they are approximately correct.

A. Yes, sir; approximately so.

Q. 11. Those dates you have given—are those the dates placed upon the drawings by Mr. Locke himself?

A. Yes, sir.

Q. 12. Do those sketches, then, taken in the consecutive
159 order of dates, exhibit the gradual and progresseve growth of the device which you subsequently put into use when completed?

A. They probably show the progression approximately; there was a great many devices, suggestions, and sketches which were considered important, but finally abandoned, as considered not of practical value, although these drawings show very nearly the vital points as to all those devices as each went along from step to step, so far as Col. Locke was concerned. There were other drawings made which do not seem to have been preserved, but the manufacture finally centered upon the form as we have it represented here.

(By Mr. LOGAN:)

Q. 13. That is, finally centered upon No. 6?

A. Yes, sir; Exhibits Nos. 5 and 6, as shown. There were other modifications, but more in the detail to economize the manufacture and the convenience of moulding, etc., which did not affect the general feature of the device.

Q. 14. So, then, as a device, considered with reference to its functions is concerned, you have since then been and are still using the device exhibited in sketches Nos. 5 and 6?

A. Yes, sir.

Q. 15. During the period represented by these sketches and the progressive development of the devices in question, to what extent, if any, did you yourself suggest any changes which appear, having reference to the cause of such suggestion, as based upon practical experience in the use of the device or otherwise?

A. In regard to the construction of the disk valve which was under consideration and used for some little time, I was strongly inclined to the adoption of a disk valve from the very satisfactory use in which I had used it under different circumstances and for a different purpose, having used it for several years as a governor valve for steam-
engines with extraordinary good success, being a valve of
160 very fine graduation, and the adoption of the disk valve while this matter was being discussed was largely influenced by my favorable recollection of the use of the disk valve for very

fine graduation. When the consideration of the piston valve came up there was but little to be suggested in its adaptation to our use, except the proportions of the valve, as all of the principles were embodied in the drawing, and the slight modifications which were necessary to adapt it to our use was discussed and adopted from a mechanical standpoint, which would be very natural and very easy for any one to determine. The shape of the piston for the graduation, which was simply a conical shape of the piston, I remember that I objected at that time, and thought we would get too much water ram; but I finally consented to make the piston, as shown in the earlier drawings which we have just examined. When the result in the use of the valve proved that it was what I had feared, I then positively ordered the change made, as is shown by the later drawing, to effect the graduation of the valve.

Q. 16. Will you please examine the wood cut on page 140 of the book here handed you and state whether that is the illustration and the book to which you have before referred in your testimony as the basis or starting point of your adoption of the piston valve?

A. This is the valve which we considered.

Mr. HOSEA: Counsel for defendant here offers in evidence the book referred to, entitled "A Manual of Steam-engines and other Prime Movers, by William John Macquorn Rankine, fifth edition, revised, London, Charles Griffin & Co., Stationers' Hall court, 1870," referring particularly to the matter shown on pages 140, 141, and 142, and for the convenience of examination produces a typewriter copy of the printed matter referred to, and a copy of figures 40 and 41 of said book, and attaches the same to the deposition as Exhibit No. 7.

161 Mr. LOGAN: Complainant's counsel reserves any right of exception hereafter which may be found upon comparison of the copy with the original.

Mr. HOSEA: The notary is requested to make a comparison at leisure and certify the result upon the record, the original book and copy being placed in his hands for that purpose.

Q. 17. Will you please state specifically what it was that led to suggesting the changes in the form, construction, or operations of the piston valve which you originally adopted from illustrations and descriptions, and which changes or modification are embodied in the device as you now use it, and as illustrated in sketches Nos. 5 and 6, without reference to who made the changes?

A. As I looked at it, there was two changes made. One was in the finer graduation to prevent the water ram than what the Rankine device shows, embodying the same principle, but reducing it to a finer graduation; and the second, to the packing of the pistons to keep them from leaking. The device in the Rankine valve does not show that they are packed, being simply a piston valve, and which piston valve is often used at the present day without packing. They are used for steam-engines and other purposes, simply a piston valve; but in our use we considered it necessary to pack the piston instead of trusting to the fit of the piston to the bore of the

cylinder, which was done by the common cup packing, a device in universal use.

Q. 18. You will observe as one of the changes or modifications made in the Rankine valve that the serrated flange constituting the upper portion of the plunger "E" in the Rankine device is now transferred to and forms the lower extension of the upper opening of the discharge chamber. Do you know what led to that specific change, and at whose suggestion was it made, as shown in figure 2, page 10, of Complain-t's Exhibit Lane & Bodley Pamphlet? And in this connection I also direct your attention to Exhibit Sketch No. 4, in which the first suggestion of that change occurs in the pencil marks to which you have referred?

162 A. I could not tell who made the suggestion of that change. We had several draftsmen in the room, as it was our custom to consult with any and all draftsmen upon any question, also with the foremen of our different departments, consulting among ourselves, and who made the first suggestion of the change I could not tell. It is simply a mechanical change, without affecting the principle. It would be simply a mechanical question as to which would be the most convenient.

Q. 19. During the period when Col. Locke was continually in your employ, as stated, did he at any time suggest or claim any patentable invention in the device under consideration?

A. He never made any claim of it to me. I had no knowledge of his making any such claim or of any intention of making such claim upon this Rankine valve which had grown up while he was with us.

Q. 20. Did you yourself or those associated with you consider that the changes which you have described embodied any patentable invention?

Mr. Logan: I object to the question as incompetent.

A. We had no idea there was any invention in the device whatever.

Q. 21. Did you consider or do you now consider that these changes were made or suggested by Col. Locke?

Mr. Logan: I object to the question as incompetent.

A. We had no idea there was any invention in anything that was done in the construction of that valve. The thing was discussed in our drafting-room. We had, I think, two other draftsmen there at the same time. I am sure we had two others who were employees of our concern. The thing was discussed and talked over, and we considered we were just building or copying the Rankine valve, with the slight modifications I have stated.

Mr. Logan: The answer is objected to as incompetent and, further, as irresponsive.

163 Q. 22. My question has reference to these modifications—as to the agency, exclusive or otherwise, of Col. Locke in re-

gard to them. With this explanation, will you please answer the preceding question?

Mr. LOGAN: Same objection repeated.
Question 21 read to the witness.

A. I do not.

Q. 23. As a matter of fact, so far as your recollection goes, were they made exclusively by Col. Locke?

A. They were not.

Q. 24. During the period of his employment, to wit, from 1871 to 1874, did Col. Locke claim to have made these modifications of his own unassisted volition or ability?

Mr. LOGAN: Question objected to because it includes modifications which the complainant does not claim to have made.

Mr. HOSEA: Counsel for complainant is reminded that the defendant company is sued upon a construction which it makes. I have already shown that the construction which it now makes is the Rankine device, with certain modifications. If any infringement can be predicated upon these facts it must exist in the use of these modifications.

Mr. LOGAN: To which counsel for complainant answers that the predicate of the statement just made is the predicate of the objections which have been made. The assumption is that the complainant's device is the Rankine device with certain modifications put in that form. The assumption is objected to. Complainant's device, as is claimed by him, is a device embodying patentable features which do not exist in the Rankine device.

A. He never made any such claim, to my knowledge.

Q. 25. When and under what circumstances did you first learn of his intention to apply for a patent, if you at any time learned of such intention?

164 A. My recollection is, the first knowledge I had of his making a claim for a patent was in reading the allowances of patent claims in a report from the Patent Office.

Q. 26. How long was that after he had left your employ?

A. That is a matter of record I cannot recall. He left our employ in February, 1874, and it seems the patent is February, 1876.

Q. 27. What, if any, contract did you have with Col. Locke during the period of his employment in respect to patents or patentable inventions?

A. I never considered that we had any contract, any more than Locke had often spoken to me about some great invention which he thought he would bring out in connection with hydraulic elevators for the economizing of the use of water. The hydraulic elevator as we then made, and as largely made at the present time, takes as much water to carry the empty platform from the lower floor to the upper part of its run as to carry a load or all that the machine would carry, and these inventions that we talked of as being a desirable one, which he thought he could make, was to economize the use of water, adapt the water to the load; that would have been a

very valuable invention and we had talks about it, but he never gave me any information what his plans were for effecting this very desirable object. On the 28th of October, 1872, I wrote Col. Locke a letter in reply to several verbal requests that he had made in regard to information about his being continued in our employ, and also in regard to these inventions which — were expecting to be brought out and without any reference to anything that had passed, and I wish it to be distinctly understood that any reference which is stated here about patent allowances was the prospect of future development and not anything which had passed; no claim had been made for any invention up to that present time and no claim was ever made for any invention which was brought out while he was in our
165 employ and for which he demanded compensation, according to the terms of this letter, which is a copy from our letter-press book.

Mr. Hosea: Defendant's counsel here offers in evidence the copy presented by the witness of the letter to which he has referred, the same being a transcript from the letter-press book of the defendant company, marked Exhibit No. 8.

Q. 28. During the period of Col. Locke's employment what opportunity, if any, did he have, other than that presented by the experience of the firm in its practical manufacture and use of the various devices constructed and put upon the market, for determining the necessity or advisability of any modifications of machinery used?

A. I understand the question to mean whether he had — or was so far entrusted that it was left to him to discover wants of the establishment and to supply them independent of any instruction. Is that the question you want to get at?

Q. 29. Yes, sir. I want you to state what his experience was in detail.

A. Col. Locke, nor no other draftsman or employee, has ever been entrusted with discovering the wants of our manufacturing establishment. The heads of the concern determine the wants, and men are employed to supply them. Many of the wants are supplied by the heads of the concern themselves. Assistants are called in, of course, who are employed for that purpose. Col. Locke was employed, I may say, specially, at the time that he was employed, to supply the want of bringing out a hydraulic elevator, which was an entirely new article of manufacture in the United States. It had been in use a great many years in Europe, but was almost unknown in the United States; and another modification, the modification of a hydraulic elevator, which was brought out after Locke's employment, differing from what we had made up to the time that he was employed, was taken from English works almost identically, as the valve was. Search was made by Col. Locke and by ourselves through the mechanical works to find what the world had
166 done in this line, as was the custom, we adapting the experience of others to our own use, so far as we found them, using all the experiments and experience of others to supply our

own wants, so far as they would go, making up the deficiency ourselves or through employees.

Q. 30. So far as any experimenting was done with reference to devices in use and any modifications or changes in such device, under whose direction and at whose expense were such experiments made?

A. They were all made by my direction and at the expense of the Lane & Bodley Company.

Q. 31. Did Col. Locke, during the period of his employment, ever claim or intimate any right or ownership of any kind in this three-way valve which you finally adopted?

A. The only remark that Col. Lock ever made in regard to any invention to me in regard to this three-way valve that I recollect was made at the time there was a patent issued. There were two patents came out very near together, the first issued to Warner and the second to a man named Vaughn, and in talking to Col. Locke about these patents he made the remark to me that if there was any invention in the patents it belonged to him and not to them; that was the sum and substance of his reply. These patents, as they came out, if they could have been made valid, would probably have restrained our use of them, and we were threatened with suit from both patentees. We showed them our ground of defence, and it was the last that we have heard of either of them.

Mr. LOGAN: The last portion of the answer objected to as incompetent.

The WITNESS: This remark of Col. Locke's was simply an incidental remark, without any reference to any arrangement or any claim which he may have had, as far as his employment was concerned.

167 Q. 32. When and under what circumstances, if at all, did Col. Locke ever claim any independent exclusive ownership in this alleged invention?

A. The only claim that he ever made to this three-way hydraulic valve, which he obtained a patent on, was made a few months ago, and just previous to the commencement of this suit.

Q. 33. As a matter of fact, were you, during the time he was in your employ and after 1874, manufacturing this valve and selling it as a part of your general manufacture?

A. We were and had been all the time that he was with us.

Q. 34. Was he aware of that fact?

A. He was.

Q. 35. Did he make any objections thereto in any way?

A. He made no objections whatever.

Q. 36. Has he been aware of your manufacture of this valve since that time and during the years that have intervened?

A. He has been aware of it.

Cross-examination by Mr. LOGAN:

Q. 37. With reference to the valve that you made as a part of

your manufacture at the date that was referred to, 1874, is it the same valve that you have manufactured since?

A. It is.

Q. 38. I understand that the Lane & Bodley Company is the successor of the Lane & Bodley partnership; is that the case?

A. It is.

Q. 39. You are now and have been the head of the concern since its organization, as I understand; is that so?

A. Yes, sir.

Q. 40. Have you had any special education in applied mechanics other than that which you have derived from your experience as the head of this concern?

168 A. I never went to a school of technology. I never graduated at a college, but I have been a student all my life. I commenced in mechanical pursuits about 1843–'44. My first lessons were in connection with a saw-mill—no; it was not, but it was in connection with wood-working machinery, however. My second lesson was in a saw-mill, and my third was in a machine shop. I have been in a machine shop since 1845, I think, continuously.

Q. 41. The object of my question is simply this: I wish to know whether you consider yourself to be a mechanical expert in the sense of being familiar with the practical operation of machinery with which you are engaged; also the history of the art of such machinery, with such other knowledge, maintained by study and comparison of devices, as would enable you to distinguish and describe the differences, or whether, on the other hand, the knowledge which you have is simply that knowledge which you have acquired by practical experience during the periods you have just spoken of?

A. Well, I do not know what you are driving at. I will say I consider myself a mechanical expert in the line of my own business; that I judge of cause and effect and have as good constructive abilities for adapting and devising the means to the end as is generally found and a great deal better than the average of mechanics. I hold the reins in my own hand of judging what, either of form or device, is to be used or when to be used or to be modified, as I may direct. Coming down to the technical knowledge, such as might be acquired by the student of our technical schools to-day, as I stated before, I have never been to any such schools.

Q. 42. What do you consider to be the three prime requisites demanded for the successful operation of the modern hydraulic passenger elevator?

Mr. Hosea: This question is objected to as not a proper
169 line of cross-examination under the circumstances, inasmuch as Col. Lane has not been introduced into this case as an expert, but as a witness to facts.

Mr. Logan: Counsel for complainant states that he desires to apply the questions and answers solely to the device and authorities which Col. Lane has heretofore produced.

Mr. Hosea: Accepting the explanation given at its full value, there still does not appear to be any reason for expecting of this

witness a dissertation upon hydraulic machinery, and unless an answer is expected of less limited construction than implied upon the face, its effect is to call for the dissertation.

A. I would consider first the place or house to put it in; second, a machine to hold the water; next, the water to run it.

Q. 43. Are those the only requisites that you consider or that your mechanical capacity dictates in the various steps, as you term it, by which the Rankine device was developed into the elevator which you now use?

A. Well, I consider those are the three requisites of an elevator. You could not do without either one of the three and have a passenger or freight elevator.

Q. 44. The question is repeated and an answer requested.

A. I answer the same as before.

Q. 45. Is that the only answer that you will make to the question?

A. Well, it is all it deserves, I think. I am not here as an expert; I am here to testify to facts. We will give you all the experts you want from another source.

Q. 46. Col. Lane, the substance of your testimony this afternoon has been to this effect, that it was entirely owing to your suggestion and your supervision and your final decision that the various steps shown in these sketches were taken, and that the device shown in sketches Nos. 5 and 6 were finally adopted. Now, without dealing with you as an expert beyond your own statement, in order that the court may judge of the truth of your statement and
170 your ability to do such a thing, and to show how far your case should rest upon your statement, I desire you to tell me first what you found in the history of the art of this device; second, what defects you found to exist; third, the specific suggestions which you made whereby those defects might be remedied?

A. The valve which I have been talking about here this afternoon is not an elevator; it is only one of the appendages of an elevator; it does not belong peculiarly to a passenger elevator, but the counsel observes a difference between passenger and freight elevators. This valve belongs peculiarly to a hydraulic elevator. There were certain requirements of the valve which we knew existed which had to be complied with mechanically: One was to compel a start of the elevator from a period of rest, another was to stop it, and another to start it in an opposite direction; thus there were three requisites in the valve; the operation of this valve must be convenient, the operation to be handled by a person on the platform or on any floor of any story of the building; there was perhaps another requisite, the mechanism of the device must be simple, because it was to be handled by unskillful persons; it must be strong enough to stand the pressure of whatever it may be. They must be adapted to the pressure that was found. It must not give an excessive water ram; if it did it would burst the pipes. Our first device, beside the disk valve—that is, a device used before any of those we have discussed this afternoon—in this first device we could accomplish all this, but it was too slow; if we operated quick, as it

was necessary to do, we got a water ram. The next step we took in the direction of remedying that trouble was at the time when Locke came in with us, and he was employed, as I have before stated—that is, his employ was influenced by his claims of knowledge of hydraulic machinery and of what had been done in the arts before.

P. P. LANE.

Thereupon the further taking of testimony was adjourned.

171 SATURDAY, *January 16th*, 1886.

Met pursuant to adjournment.

Present: Messrs. L. M. Hosea and T. A. Logan.

James B. Stanwood.

JAMES B. STANWOOD, being first duly cautioned and solemnly sworn, deposes and says as follows:

Examined by Mr. HOSEA:

Q. 1. State your name, age, residence, and occupation.

A. James B. Stanwood; thirty years old; residence, Cincinnati; my profession is that of mechanical engineer. I am at present draftsman of the Lane & Bodley Company.

Q. 2. Please state what your education and experience has been with reference to mechanical principles or construction or with reference to their constructive details, operations, and functions, giving in brief a detailed statement of your mechanical education and experience.

A. I graduated at the Institute of Technology, in Massachusetts, in 1875, in the degree of engineer. I subsequently was in the Cincinnati and Indianapolis railroad shops about six months and in the Boston and Albany shops, in Boston, at the bench and lathe. In October, 1876, I was employed by the Lane & Bodley Company as draftsman, where I have since been, and for the last four or five years have had charge of the designing of all their machinery.

Mr. HOSEA: The defendant now offers in evidence a copy of letters patent No. 143,266, dated September 30th, 1873, granted to James A. Vaughn, Cuyahoga Falls, Ohio, for an improvement in balanced valves for hydraulic cranes.

Also a copy of letters patent No. 132,526, dated October 29th, 1872, granted to W. R. Dunlap for an improvement in balanced valves.

172 Also a copy of letters patent No. 78410, dated January 2nd, 1868, granted to Robert Andrews and Edward Armstrong for an improvement in governor valves.

Also letters patent No. 146,057, dated December 30th, 1873, granted to B. Fitts for valves.

Mr. LOGAN: Complainant's counsel objects to the introduction of the last two named patents.

Mr. HOSEA: Counsel for defendant states that the patents objected to were cited as references on the application of the complainant,

Locke, for the patent in suit. Their existence was unknown to the defense at the time of drawing the answer, but have since been discovered and now introduced to throw light upon the state of the art.

Mr. LOGAN: Complainant's counsel objects further that the art involved in said patents pertains to an entirely different branch of valves than that under consideration.

Q. 3. Mr. Stanwood, have you examined and do you understand the several constructions shown, first, upon pages 140 and 141 of Prof. Rankine's book, in evidence; second, the invention and construction shown in letters patent to W. R. Dunlap, in evidence; third, the invention and construction shown in letters patent to James A. Vaughn, in evidence; fourth, the invention and construction shown in letters patent to J. M. Locke, herein sued upon, and do you understand the construction and functional operations of the several devices referred to?

A. I have examined those drawings and patent specifications and understand their construction and operation.

Q. 4. Will you now please compare the several devices referred to and point out any structural differences that exists affecting in any way the mode of operation or the result produced thereby and point out as clearly as you may such differences?

A. I have here memoranda of the examination which I have made of these four valves and which I will proceed to answer.

173 (By Mr. LOGAN:)

Q. 5. Unless you adopt it as your testimony under oath, it is not competent. If you desire to repeat it there as your evidence, that may be done.

A. That was my idea. I was going to consider it as my examination under oath. There may be some explanation subsequent to this. I have examined the drawings and patent specifications of the hydraulic regulator valves as shown by Rankine, Dunlap, Vaughn, and Locke, and have constructed diagramatic sketches (Figs. 1, 2, 3, and 4, on sheet No. 1) to show their differences, which sheet I now produce.

Mr. HOSEA: The sheet is offered in evidence, marked Exhibit "Stanwood Sketch."

The WITNESS: These valves differ in two different ways: First, in principles of operation, and, second, in forms of construction, and under those general heads they will be considered differences in principle.

Primarily the valves all belong to a class known by the name of "piston valves." Each is furnished with a balancing piston or plunger, as shown by B, in figures 1, 2, 3, and 4, sheet one. The Vaughn valve differs from the remaining three in its principles of operation, in that it is what might be called a hollow piston valve, which consists of a space enclosed between two pistons capable of axial movement within a cylinder (I refer to the space between P 1 and P 2). In operation this space, when in one position, will con-

nect only the supply pipe and service pipe communicating with the cylinder, while by a change of position axially it will connect the service and exhaust pipes only. The remaining three types of valves may be described as being solid piston or plunger valves. Here a single piston or plunger, capable of being moved axially in a cylinder, in one position (upper), occupies the connecting space between supply and service pipes, the connection between service and exhaust pipes being open, or when (the one in lower
174 position) closing passage between service and exhaust pipes, the connection between supply and service pipe is open.

It might appear that Dunlap's valve were a hollow piston valve, but it will prove upon inspection to be a variation in form and not in principle, for it will be observed that the space between the two pistons could be made continuous with the pistons (as shown by cross-section lines, Fig. 2) without changing the conditions of operation.

Differences in Forms of Construction.

Under this head the following secondary classification of difference will be made:

1. Forms of balancing piston.
2. Methods of packing valves.
3. Means for obtaining graduated opening or closing of valves.
4. Forms and proportions of casing.
5. Forms and proportions of valves.

Under the first head, "forms of balancing piston," in the Rankine and Locke types the balancing pistons are alike, being long plungers working through stuffing boxes at the upper end of the valve casing. These valves may be operated while in a horizontal or vertical position.

The Dunlap and Vaughn balancing pistons consist of moving pistons carrying leather or rubber cup packing similar to that used in ordinary pumps. That does away with the balancing pistons and the difference, if any, here stated.

2. Methods of packing valves.

There are only two valves, as such, in each type which open and shut. They are, first, the valve between the supply and service pipes and, second, the valve between the service and exhaust pipe. In this order the various forms will be examined.

The Rankine shows no packing, either between supply and service or service and exhaust pipe.

175 The Dunlap uses a packed piston in both places, being evidently a leather or rubber cup packing, moving with valve.

The Vaughn employs a packed piston, similar to Dunlap's, between supply and service pipes, while between the service and exhaust pipes a packed plunger is used. The first packing in this case (Vaughn's) moves with the valve; the second is stationary and embraces the plunger; in this case the packing is of soft, pliable material.

Now we come to the Locke valve. The Locke valve is arranged

so that the packing between supply and service pipes is stationary, embracing the plunger, while between the service and exhaust the plunger carries the packing upon it like a piston; in other words, the plunger is packed like a piston. That is the end of analysis of differences and similarity of packing.

3. Means of obtaining graduated opening or closing of valves.

Rankine shows notches in his valve plunger on both ends, which by an axial movement of same gradually closes or enlarges the opening between the supply and service pipes or service and exhaust pipes, as the case may be.

Dunlap (see patent specification) employs a perforated liner between his cylinder and service pipe. The perforations being located at the service pipe chamber, as the pistons either above or below these holes cover or uncover them, the area for passage of water is decreased or increased, thus "graduating the flow."

Vaughn obtains graduation by bevelling the edges of piston valves between supply and service pipe and bevelling the seat for the plunger between service and exhaust pipe; thus by an axial motion of valve a gradual enlargement or diminution in diametral section is obtained.

Locke's system is similar to Rankine's, as far as notching graduating the plunger upon the discharge end of the valve is
176 concerned; but upon the supply side the graduations or notches are placed upon an extension of the valve seat instead of upon the plunger. That closes the analysis of obtaining graduated opening.

4. Forms and proportions of casing.

These vary in the different valves so as to give the suitable water passages around pistons or plungers, and also to satisfy the different methods of manufacture. The only difference of importance claimed is the chamber or enlargement formed by junction of valve cylinder and service pipe. Here Rankine and Locke are similar. By reference to drawing Locke's appears to be longer axially in proportion to diameter of valve than Rankine's to allow for projection of graduated seat "J" (see patent specification). Dunlap has a spherical chamber extended to the perforated pipe which he claims in combination with the orifices "*e*" (see patent specification of Dunlap). Vaughn's chamber is hardly larger than the valve diameter, this type of valve (hollow piston) not requiring here large waterways, as in the solid piston or plunger type.

5. Forms and proportions of valves.

Rankine and Locke use one plunger, which is used for both inlet and outlet valves. Locke claims a long plunger, the ends of which form the valves "F" and "S" (see patent specification), "whose distance apart is greater than that of said seats." Dunlap employs two "pistons secured to a piston rod" separated so that their distance apart shall be "sufficient to enclose between them all orifices *e e*" (see patent specification). Vaughn uses one piston and one plunger.

Here I would remark that when a sliding valve more than covers the valve opening it is said to have "lap." This is what the excess in length of Locke's plunger consists in, and is similar to any ex-

cess over that which in Dunlap's valve may be actually required to just enclose between the pistons all of the orifices through the casing.

177 Locke's arrangements prevents the contact of graduated openings with packing. The cup packing and notched edges are prolonged in direction of flow of water. Dunlap employs small perforations over which cup packing can move without abrasion.

I would say these drawings are diagramatic and not to scale. They are simply valves reduced to their elementary form.

Q. 6. Will you please now point out any differences in function or mode of operation as affecting the general result, together with benefits, if any, resulting from such differences, which you find upon comparison of the different structures referred to in your drawing?

A. In my opinion, there are no differences in function between any of these four valves; they are all intended to accomplish the same thing and operate in general in a similar manner.

Q. 7. Will you please now compare the invention shown and described in Locke's patent with the other three devices, to wit, the Rankine valve, the Dunlap valve, and the Vaughn valve, and point out any distinct differences found in the Locke valve as compared with the other three together, whether of form, construction, or function—that is to say, supposing the three devices, Rankine's, Dunlap's, and Vaughn's, to have been in existence, designate wherein the Locke valve shows any departure from them upon the basis indicated.

A. From the analysis just made it will be seen that the Locke valve employs mechanical appliances which are found in all the other three, such as plungers, pistons, cup packing, and graduated openings; and, in my opinion, there exists no new and distinct mechanical contrivance or construction which is not found in the three valves as shown by Rankine, Dunlap, and Vaughn, unless it may be considered the re-arrangement of parts already found there.

178 Q. 8. Considering, then, the re-arrangement of parts to which you refer as indicating a difference, whether functional or otherwise, between the devices, would such change require the exercise of invention to produce it, or would you consider it within the range of ability of a mechanic or engineer familiar with such devices?

A. As I understand the meaning of the terms inventor, engineer, and mechanic, I should say that this device came under the classification of engineer and mechanic rather than the former.

Q. 9. Please explain, then, what you understand to be the meaning of those terms, in order that we may fully comprehend your answer.

A. The usual work of a mechanic or engineer is to produce results generally by means of certain well-known mechanical devices, and to adapt the same to the work in issue—to employ the force and materials of nature as he finds them. With the inventor it is more

a matter of experiment, investigation, and discovery. That is the way I should put it, as I understand the terms.

Cross-examination by Mr. LOGAN:

Q. 10. Have you ever before given testimony as an expert in a pending patent case?

A. Yes, sir; not as an expert, but as a witness. I am not up in legal terms, but I was called in.

Q. 11. I am speaking now as an expert, purely and simply, in the abstract.

A. I can state the facts. There was a case some two years ago in regard to a patent window shade in which a certain motion was employed, and parties interested ascertained that I had seen the mechanical construction employed before, and I was subpœnaed to appear before them and state what I knew about the matter.

Q. 12. Did you do so?

A. Yes, sir.

Q. 13. As I understand you, your testimony related to
179 your knowledge of the prior existence of a similar device; was that it?

A. Yes, sir.

Q. 14. When did you prepare the essay on valves which you have given us?

Mr. HOSEA: The form of the question is objected to as unwarranted by the circumstances. The witness has been called upon to make an analysis, and did so at my request, for the purposes of this case. He has not favored us with an essay on valves; therefore the implications of the question are unwarranted.

Mr. LOGAN: The form of the question is changed at the suggestion of counsel, the fact, however, remaining the same.

Q. 15. When did you prepare the written statement which you have read this morning as constituting your testimony upon the difference of form and function of these valves?

Mr. HOSEA: The question is still objected to as involving an assumption not correct. The witness used a memorandum as the basis of his testimony given here, but his testimony is something more than the reading of a paper, as implied by the question.

Mr. LOGAN: Counsel for complainant states, without wasting time on words, the fact that the witness came here with a prepared written statement, the contents of which he recited and adopted as his testimony without any objection being made thereto, and the question simply seeks to inquire when he prepared that written statement.

The WITNESS: About November 30th I made an examination of these valves, and to simplify in my own mind the differences between them made the written statement which I have presented as testimony.

Mr. LOGAN: Complainant's counsel now submits to the
180 witness for inspection three models, of the Vaughn, Dunlap, and Rankine devices, which will hereafter be offered in evidence on the part of said complainant.

By consent of counsel the formality of offering these models in evidence in rebuttal is waived and said models are now offered in evidence, marked respectively "Complainant's Exhibits Vaughn Model, Rankine Model, and Dunlap Model."

Mr. HOSEA: Subject to any exception as to inaccuracy of construction.

Mr. LOGAN: Yes, sir; of course.

Q. 16. Be good enough to examine the models now submitted to you and compare them with the drawings and specifications of the respective patents and state whether they are, as far as they go, correct illustrations of the devices which they are intended to represent. If there are any material differences in either, please point them out.

A. I would like a little time for it.

Mr. LOGAN: Which is granted. And in the meantime the cross-examination is proceeded with.

Q. 17. I understand you to say that, in your judgment, there are substantive differences in the mode of operation or construction of the four devices shown in your sketch. Am I correct in that understanding?

A. I would like to ask what you mean by substantive differences.

Q. 18. Well, any material difference. I do not mean differences of immaterial matter. I mean, considering the inquiry in hand, any differences which would constitute differences of function or differences of improvement of construction in the sense of such differences being material to the device to which it belongs.

A. I think there is no difference in function. I think there
181 is some difference in construction, as I have already pointed them out in the analysis, as, for instance, Dunlap differs essentially from the others in using perforated openings instead of notched plungers to obtain a graduated opening. That would be one essential difference.

Q. 19. Stopping there for a moment, do you consider that difference in Dunlap to constitute such a difference of function or mode of operation as could be understood to be a patentable difference for his device? and by patentable difference I mean a difference which includes the novelty or exercise of inventive faculty to produce and separate utility when produced.

Mr. HOSEA: This question is objected to as calling for an opinion of the witness on a question of law. In another aspect, it is objectionable on the ground of irrelevancy and immateriality, in view of the fact that both devices referred to preceded Locke in the order

of time, and they were, therefore, as to him, old mechanical devices, and as to which he could only exercise the power of selection.

A. Well, I hardly know what is considered as patentable and what is not patentable. My experience has not been of that character to decide.

Q. 20. Do you consider that it required invention in Dunlap to produce the form of graduated device shown in his patent as distinct from the graduated device which had preceded him in Vaughn and Rankine?

A. Yes, sir; I do, taking Vaughn and Rankine, I should. He may have seen the device used some place else.

Q. 21. Then please state what other differences, substantive or patentable differences, you find to exist between any of the four devices.

Mr. HOSEA: The question is objected to as calling for an opinion of the witness on a question of law.

182 A. I will use the word substantive in the same sense that you intend, I think. I see no substantive difference between the Vaughn, the Rankine, and Locke valve, as similar mechanical appliances are found in all three. I would like to qualify that by saying, except that Vaughn does not use the serrated end of the plunger or valve seat.

Q. 22. When did you first know, by personal knowledge or from books, of the existence of the Rankine device?

A. That would be difficult to state exactly. I should think about twelve years ago, as we used Rankine's book as a text book at the Institute of Technology, where I was a student. I graduated there.

Q. 23. When is your first recollection of seeing a copy of Rankine's book in the Lane & Bodley establishment?

A. Well, my first recollection was since I have been employed there, and I went there on the 1st of October, 1877.

Q. 24. It was there then?

A. I think it was; yes, sir, as near as I can remember.

Q. 25. Are you acquainted with Mr. A. E. Watkins; and, if so, was he in the employ of the Lane & Bodley Company at any time during your service there; if so, between what dates?

Mr. HOSEA: I reserve an objection to the question as irrelevant, immaterial, and improper cross-examination.

A. Yes, sir; I remember him, but I could not tell the dates unless I referred to some memoranda or drawings that I made that year. I forget whether it was 1872 or 1873. He was employed the same year I was there serving an apprenticeship during one of my vacations. I was not regularly employed there and received no pecuniary compensation.

Q. 26. Will you be good enough to make the inquiry as to his employment, so you can answer?

A. Yes, sir.

Q. 27. What system prevails, if you know, in the Lane &
183 Bodley establishment of preserving and marking for future reference the drawings and sketches which are prepared for them?

Mr. HOSEA: I object to the question as irrelevant, immaterial, and improper cross-examination.

A. Those we are using now?

Q. 28. All that you have any knowledge of.

A. Well, in that which is used now each drawing is numbered and indexed when it is complete and filed away.

Q. 29. I am referring more particularly, say, since the time of 1872. Col. Lane has referred to these exhibits here covering 1872 and 1873.

A. Well, there was no system at all, except what marks the draftsman may have put on.

(By Mr. HOSEA:)

Q. 30. How do you know?

A. I was there for about two or three months in 1872 or 1873. I was there without compensation.

Q. 31. I find, for instance, upon Respondent's Exhibits No. 1 the mark "936–24." What does that refer to?

A. In subsequently cataloguing and arranging the drawings, some four years back, all the drawings were marked consecutively, and the first number, "936," is the drawing, and the number "24" refers to the drawer in which they were located. The drawings were in disorder, and we catalogued them to systematize them.

Q. 32. Do you remember while you were there and Col. Locke was also there that he prepared a drawing of a piston valve the graduating device of which consisted of diamond-pointed openings or slots; and, if so, do you know what has become of that sketch?

A. No, sir; I have never seen it, and consequently do not know where it is. I do not remember of seeing it and do not place it in mind.

Q. 33. If, then, you are correct in your statement that there are no substantive differences existing between the four valves
184 shown in your sketch, should it not be the fact that the Rankine device was as capable of efficient use and successful operation for all the purposes of the modern improved hydraulic passenger elevator as either of the others?

A. I should say not, because the Rankine, as shown in this book, has no packing to the valves.

Q. 34. Do you consider, then, essential to the requirements of the last-described valve that there should be packing employed? The last-described valve is the modern passenger-elevator valve.

A. Yes; I should consider that there were.

Q. 35. Is it not the fact that the ordinary cup packing if employed in such a valve is liable to be impaired and to permit leakage

by reason of the attrition of foreign substances existing in the water?

A. Yes, sir; it is.

Q. 36. Is it not the fact also that it is most desirable in such a valve as that last described that the flow of water should be so controlled as that, upon the one hand, all tendency to water ram should be avoided, and, on the other hand, perfect ease and accuracy of operation should be attained by the operator when using the elevator?

A. Yes, sir; I grant that.

Q. 37. Do you consider that the Rankine device was intended to apply to and was adapted for the valve last described?

A. By the one last described you mean the Locke?

Q. 38. No, sir; I mean the valve to the modern passenger elevator.

A. I believe that the value is used for that purpose in England to-day.

Q. 39. Do you know this fact?

A. No, sir; I am not positive of it as a fact, but it is used on water engines, and a hydraulic elevator is a water engine.

Q. 40. Then can you explain why it is that if the Rankine
185 device is now in successful operation for such use in England it was not adopted for successful use by the Lane & Bodley Company?

A. Well, I think it was. I am not certain on that score. I am not certain about that. I think that it was at first, and was subsequently modified in that respect.

Q. 41. Assuming, then, from your standpoint, that the Rankine device was that which was originally adopted by the Lane & Bodley Company, and that the form of the device has been changed to correspond with that which is shown in Complainant's Exhibit Lane & Bodley Pamphlet, then, I ask you again whether, in your opinion, the changes, or modifications, or differences therein shown, by whatever name you choose to call them, require the exercise of invention to produce them; and, if not, why not?

A. I do not consider them as requiring invention, as different modifications have been made of similar implements and devices well known before; modifications of shape of opening and packing of the valve and which are those of degree—that is, the shape of the opening is of degree.

Q. 42. With the Rankine device would a hydraulic hoist be retained at rest at any point desired by the operator?

A. I think it can if sufficient lap is given to the valve. I have already explained what I mean by the word lap.

Q. 43. Is it not one of the essential requisites of the modern hydraulic passenger elevator that it should be enabled to be brought to and held in a state of rest at any desired point?

A. Yes, sir.

Q. 44. Then, if I understand you, before this could be achieved in the Rankine device an alteration had to be made in said device,

which you call extension of lap. In your judgment is that the only alteration required for that purpose?

A. I think that you misunderstood me. I did not say that
186 such an alteration had to be made. I said in the Rankine device the ability to stop the elevator in the position could be obtained.

Q. 45. I think that we understand each other, then.

A. I think not. I did not say that the Rankine valve did not have lap.

Q. 46. Well, then, let us get at that by another question; do you say that the Rankine valve has lap enough to give it that qualification?

A. That is simply a matter of construction. I think the Rankine valve, as made in England, has lap enough for that purpose. These sketches in the book are simply diagramatic.

Q. 47. Then if you are still further properly understood, giving lap enough in the Rankine device to insure the last-named qualification, it can be as well adapted for successful use upon a modern passenger elevator in this country as in England; is that correct?

Mr. Hosea: This question is objected to as all others which embody the terms "modern passenger elevator" as too indefinite to permit of explicit answer.

A. I think with the addition of packing it would, with sufficient lap.

Q. 48. In order to prevent misapprehension, the witness is informed that when the words are used "modern hydraulic passenger elevator" such elevators are intended as require for use valves having the attributes shown in the respective patents under consideration. With that understanding the witness is asked whether it is not also a requisite for the successful service of such elevators that there should be the ability to suspend the operations of the pump or to hold the pumping engine stationary at any given point.

A. Yes, sir; I should say that it is.

Q. 49. Prior to your engagement with the Lane & Bodley Company had you any practical knowledge of the construction and use of such valves as we are now speaking of?

187 A. I had no practical knowledge; simply what I acquired from reading books, you might say.

Q. 50. Have you any personal knowledge of the history of the introduction into use of the Lane & Bodley device as now shown by the Lane & Bodley pamphlet?

A. I have no knowledge upon that point.

Q. 51. In making the analysis which you have given this morning did it occur to you to institute any comparison between the respective merits of the forms of cylinder and modes conveniently adapted respectively by Dunlap & Vaughn?

A. No.

Q. 52. In your testimony-in-chief you have used the words "plunger," "piston," and "cylinder" in the sense of their having different meanings. Please explain, will you, with reference to the

subject now under discussion, what actual differences actually exist between those three forms.

A. A cylinder, where it is here used, may be described as the piece or pieces of metal through which a cylindrical hole may be bored or exists. A piston consists of a solid cylinder whose axial length, as I understand it, may be less than its diameter, while a plunger is simply an elongated piston in the direction of its axis. It would be very hard to say where the plunger left off and the piston began—just as hard as it would be to say where a boy leaves off and the man begins.

Q. 53. In any of the devices now under consideration is the piston, plunger, or cylinder composed of more than one piece of metal?

A. In any of these illustrations here?

Q. 54. Yes, sir. Or, on the contrary, is it not the fact that it is simply one rod of metal with different thicknesses at different points?

A. They can be of one piece or a number of pieces.

Q. 55. You do not understand. I do not ask whether the shaft is cast in one piece or jointed or screwed, but, as it is completed here, do they form more than one shaft.

188 A. I do not think I understand.

Q. 56. When counsel argue this case before the court and use the words piston, plunger, and cylinder from the testimony in the case I want it understood whether those words refer to and include the single shaft of metal which appears in the center of the respective devices, and which in some devices, as is Rankine, is of different thicknesses at different points of its length, or as in Dunlap, with the same thickness throughout, but furnished with the appliances shown in the patents and models whereby the various functions are performed. That is all I want to get at.

A. In my use of the term I have used them as different pieces connected together with a rod. For instance, take the Dunlap, in my opinion there are three pistons connected together by one rod; take the Vaughn, there are two pistons and one plunger connected to one rod, and take the Rankine, you might say there is one piston and one plunger. I separate them.

Q. 57. Take the Rankine model and tell me by reference to it what part of the central shaft you call the piston and which part you call the plunger.

A. The enlargement on the lower end of the shaft I would call the plunger; the enlargement on the upper end a piston.

Q. 58. And so with the rest?

A. That is my understanding. I refer to the model. The sketch made by me is different. When I come to make my analysis of differences I will point that out.

Q. 59. Do you remember a hydraulic elevator sent out from the Lane & Bodley Company which had among its other arrangements a device intended to adapt the amount of water consumed proportionately to the weight or load to be raised?

A. I remember of Watkins and Col. Locke investigating the

matter, but I do not think anything was ever built, to my knowledge. We have drawings for such an apparatus.

189 Q. 60. Do you wish to be understood as saying positively that no machine was made by the company pursuant to those drawings?

A. Not to my knowledge.

Q. 61. If there had been such a machine made, would you, in all probability, from your position in the establishment, have been aware of the fact?

A. Yes, sir; I think I should. Let me add to that, there was an interval of three or four years when I was not in the employ of the company, and one may have been built at that time; but it has not come to my knowledge since.

Q. 62. I am referring to the time immediately succeeding the time when the drawings for such a machine was prepared, and of which drawings you say you had knowledge. Now, did you not also have knowledge of the production of such a machine?

A. No, sir.

The further taking of testimony was adjourned, to meet pursuant to agreement.

OFFICE OF L. M. HOSEA, ESQ., 65 JOHNSTON BUILDINGS,
THURSDAY, *January* 21*st*, 1886.

JAMES B. STANWOOD recalled for further cross-examination.

By Mr. LOGAN:

Q. 63. Have you examined the models heretofore submitted to you?

A. Yes, sir.

Q. 64. Do you find them to be correct in the material parts of the devices which they represent?

A. Yes, sir.

Q. 65. Are you still of the impression that the valve described in Rankine's work, pages 140 and following, is now and has been used for the purpose of passenger elevators?

190 A. I think that it has with some modifications which would naturally suggest themselves.

Q. 66. Please describe briefly what you consider to be such necessary modifications.

A. I think that if the valve were fitted with two packing rings and sufficient lap that it would be entirely suited for hydraulic elevators.

Q. 67. Could the ordinary cup packing be applied to the Rankine device without change in the form shown in the printed illustration, page 140?

A. Yes, sir; I think it could.

Q. 68. Could the valve, constructed as therein shown, without modification, be depended upon to retain a hydraulic elevator at rest at the will of the operator?

A. Yes, sir.

Q. 69. Without any modification whatever?

A. No, sir; I do not think that it could without cup packing, as there would be more or less leakage under those circumstances.

Q. 70. If the ordinary cup packing be added, as you have suggested, do you think that the valve could then be depended upon for such use?

A. Yes, sir; if it has sufficient lap.

Q. 71. Have you ever seen such a device, I mean the Rankine device, modified by cup packing and lap in practical operation?

A. That is practically all there is in the Locke device.

Q. 72. Aside from the Locke device, the question is repeated.

A. No, sir.

Q. 73. Would you be good enough to make at your convenience and attach as a part of your deposition a calculation of the friction in a disk valve with a supply pressure of forty-seven and a half pounds per square inch and a back pressure of thirty-seven and a half pounds?

Mr. Hosea: I object to it as clearly beyond the limit of
191 cross-examination and beyond any right of counsel to demand of the witness; and the witness is instructed that he may exercise his own pleasure as to making the calculations desired or decline to make it.

A. I decline to make a calculation of that character, as the result being too indefinite and unsatisfactory to myself.

Q. 74. If the Rankine device was to be modified, giving lap as you have stated, and adding cup packing, where would it be necessary to place the cup packing, and in what direction should the cups be placed?

A. I should place one cup packing on the outlet side of the valve, in the position as shown by Locke valve, Fig. 4, sheet 1; on the inlet side cup, reversed in the opposite direction, but attached in the same manner to the plunger, and I hereto append a sketch.

(Sketch marked "Stanwood Exhibit No. 2.")

Q. 75. If, then, you are correctly understood, the modifications of the Rankine device which you have referred to, to wit, an extension of lap and the cup packing, are simply such modifications as would naturally suggest themselves to a mechanic ordinarily skilled in that way, if the occasion was presented to him for their use; is that correct?

A. Yes, sir.

Q. 76. If, then, you are further correctly understood, the addition of such modifications from the Rankine device, and as are described and shown in the Locke device, all fall within the category of those additions, which are known as simple mechanical equivalents or shop expedients; is that correct?

A. Yes, sir.

Q. 77. Are you aware of the fact that from June, 1872, to 1874

mechanics who were only ordinarily skilled were employed in Lane & Bodley's establishment?

A. As far as I know ordinarily skilled mechanics were employed there at that time.

Q. 78. Can you now give me approximately the dates
192 between which you were at Lane & Bodley's establishment as a volunteer?

A. I think that it was in June and July, 1873.

Redirect examination by Mr. HOSEA:

Q. 79. You stated in answer to a question put to you by Mr. Logan (question 41), with reference to the changes or modifications in the Rankine device existing in the Locke device, or that now used by Lane & Bodley, that you did not consider them as requiring invention, "as different modifications being made with similar implements and devices well known before, modifications of shape of opening and packing of valve, and which are those of degree." Will you please explain more at length what you mean by that answer and particularly point out, by a comparison of the several devices before you, what the functions are with reference to their connection with hydraulic elevator service, with reference to differences in degree rather than in kind?

Mr. LOGAN: The question objected to as calling, in substance, for a repetition of the witness' previous testimony and as being in chief.

A. The principle upon which a hydraulic elevator operates can be shown simply by the cut of one on page 7 of the Lane & Bodley Company catalogue in evidence, though this is only one of a variety of kinds. It consists in admitting water under pressure behind a plunger or piston connected by suitable mechanical means, directly or indirectly, to a platform upon which the load is raised or lowered; to control the supply of water and its exit from the cylinder in which the plunger or piston works a valve is necessary; it should be arranged and operated by an operator upon the platform. In the construction of these valves certain difficulties were encountered (at the outset); an ordinary stop-cock or sliding plate was
193 found to have too much friction, and when a sudden opening was made between the inlet or an outlet pipe the well-known water ram was found to be destructive to the satisfactory working. To obviate the friction the piston or plunger valve, or some modification of the same, was employed by Rankine, Dunlap, Vaughn, and Locke, and to prevent water ram the edges of the valve were notched, as shown by the Rankine and Locke, and bevelled, as shown by Vaughn, and perforations employed by Dunlap, all to accomplish the same result—that is, to gradually contract the area through which the water had to pass, thereby preventing the sudden shock due to closing. In regard to the balancing means, they all of them have used plungers or pistons at the end of the valve cylinder on the inlet side. To prevent leakage by the pistons and plungers cup packing has been employed by Dunlap, Vaughn, and Locke Rankine showing none. In the light,

then, of these facts, I cannot see any difference in the operation of the Locke valve or its functions, as he uses the notched edges of Rankine, the cup packings of the others, a balancing plunger similar to Rankine; he has enlarged the chamber at the service pipe, and places the notches for his inlet valve around the plunger instead of upon it, as Rankine has done, which necessitates the lengthening of the chamber referred to axially; this chamber is found of varying sizes in Rankine and Dunlap, and it exists, in fact, in Vaughn, in that there is a space between the pistons and plunger; the size of this chamber is only of such dimensions as will allow of easy flow of water, and can be varied to suit the notion of the designer; another point for the satisfactory working of the valve is that when holding the water in the cylinder of the elevator, the elevator being at rest, there should be no difficulty in adjusting the valve or position to suit this condition, and for this means lap is employed (as already defined by me) by Dunlap and Vaughn, and if any exists it simply varies in amount or degree from enough to just simply cover the openings to a foot or
194 more if found necessary. This is no new idea (the employing of lap), as it has been used on most kinds of sliding valves.

Mr. LOGAN: The entire answer is objected to for reasons last stated.

Q. 80. Please refer to the Dunlap, Rankine, and Vaughn devices and state whether you find in either of them this assemblage of parts, to wit: "A chamber (corresponding with the chamber P of the Locke device) having on opposite sides a permanent service passage (corresponding with the service passage C of the Locke device), two other passages (corresponding with the passages Q and L of the Locke device) having a common axis and terminating at said chamber in seats (corresponding with seats R and E of the Locke device) having supply and discharge valves (corresponding with the discharge and supply valves F and S of the Locke device) whose distance apart is greater than that of said seats, said supply valve and discharge seat being prolonged in the direction of flow so as to permit of the independent control of the supply, discharge, and other operations by the period of complete closure."

Mr. LOGAN: The question is objected to as being clearly in chief and manifestly leading.

A. I find all those parts to correspond in the Dunlap and the Vaughn with the Locke—that is, all those parts mentioned in the question down to and including the phrase "the discharge and supply valves marked F and S." In answer to the latter portion of the question, commencing with the words "whose distance apart is greater," etc., the distance is not determinate, as far as distance apart is concerned, as they could only be determined by measurements of the specifications, which I doubt are not to scale. While the phrase "seats prolonged in the direction of flow" is not found in either of the other two in actual fact, if by "the seat" is simply

meant the edge it is not found in the Locke valve or in the
195 other three; if by "seat" is included the cylindrical portion of the valve chamber immediately behind it or the length of the plunger, it is found in all the in there direction of flow.

Q. 81. Will you please now refer to the same device-, Rankine, Vaughn, and Dunlap, and say whether or not you find in any of them the following combination or assemblage of parts, to wit: In combination with a duplex valve plunger and a three-way passage substantially as shown in the Locke drawings, a balancing piston adapted to operate in substantially the same manner as in said Locke device?

Mr. LOGAN: Question objected to for the reasons last stated.

A. I find a balancing plunger in the Rankine and balancing pistons in the Dunlap and Vaughn; it might be well to state here that the Rankine balancing plunger is modified so as to enable it to be operated by water power rather than by hand. I will say that all of these are adapted to operate in the same manner as the plunger in the Locke device.

Recross-examination:

Q. 82. Referring again to the four figures on sheet 1, and starting with the Rankine device as a basis, do you consider that the modifications of the Rankine device shown in the Dunlap device, figure 2, require the exercise of invention to make them?

A. I answered this question at the last examination. I said in substance that the Dunlap valve employed different means for accomplishing the contraction of the flow than the Rankine, in that perforated openings were employed rather than notched edges to the plunger.

Q. 83. Comparing Rankine with Vaughn, would you consider that Vaughn's modifications require the exercise of invention to produce them?

A. No; I should not in Vaughn.

196 Q. 84. Do you find in Dunlap any substantial modifications of Rankine other than the perforations?

A. No, sir.

Q. 85. Then, if you are rightly understood, adding the perforations to Dunlap, as shown, required the exercise of invention on one hand, while, on the other hand, the addition of the cup packing to Rankine, as shown in your sketch, together with the extension of the lap, as also shown therein, did not require invention. Am I right?

A. Yes, sir; as these both existed, in my opinion, in the Dunlap valve before the Locke valve was constructed—the lap and cup packing both.

J. B. STANWOOD.

STATE OF OHIO, *Hamilton County,* } ss:

I, Matt. J. Day, a notary public in and for the county and State aforesaid, do hereby certify that P. P. Lane and James B. Stanwood

were by me first severally sworn to testify the truth, the whole truth, and nothing but the truth; that the depositions by them respectively subscribed, as above set forth, were reduced to writing by myself in short-hand in their presence respectively and correctly transcribed, and such transcription- were respectively subscribed by the witnesses and were taken at the time and place above noted; that I am not counsel, attorney, or relative of either party or otherwise interested in the event of this suit.

In testimony whereof I have hereunto set my hand and notarial seal this 15th day of February, A. D. 1886.

MATT. J. DAY,
Notary Public, Hamilton Co., O.

Notary fees, $22.50, paid by L. M. Hosea.

197 Deposition of Charles F. Thompson, taken before me, Henry H. Finch, a notary public within and for the county of Hamilton, in the State of Ohio, pursuant to agreement before me, at the office of L. M. Hosea, Esq., No. 65, Johnston building, Cincinnati, Ohio, January 25th and 26th, 1886, at 10 o'clock a. m. and 2.30 o'clock p. m., to be read in evidence on behalf of the defendant in an action pending in the circuit court of the United States, southern district of Ohio, western division, in which Joseph M. Locke is complainant and The Lane & Bodley Company is defendant, L. M. Hosea, Esq., being present on behalf of the defendant and Thos. A. Logan, Esq., on behalf of complainant.

Charles F. Thompson.

CHARLES F. THOMPSON, a witness, of lawful age, produced and sworn on behalf of the defendant, deposes as follows:

Examined by Mr. HOSEA:

Q. 1. Please state your name, age, residence, and occupation.

A. Charles F. Thompson; 35 years of age; residence, Pleasant Ridge, Hamilton county, Ohio; secretary and treasurer of the Lane & Bodley Co.

Q. 2. Were you connected with the said company or its predecessors during and including the year 1871 to and including the year 1874; if so, in what capacity?

A. I was; in the capacity of a clerk, having charge of the order book and part of the correspondence.

Q. 3. State, if you know, when and under what circumstances the complainant, J. M. Locke, was employed by the firm of Lane & Bodley, predecessors of the defendant company, how long he remained in such employment, and what was the object and purpose of his employment and the nature of his duties.

198 A. Joseph M. Locke was employed by Lane & Bodley in November, 1871, and his first services paid for were rendered on the 20th of November, 1871. The circumstances of his employment were a need for services of a draftsman and an engineer fa-

miliar with hydraulics, which it was supposed he could supply, a need for such talent having arisen in the development of hydraulic elevators, which now, for the first time, were being made in the United States for ordinary mercantile purposes. He remained until February 21st, 1874. The object and purpose of his employment were primarily for the development of these elevators, but his duties also covered the making of designs and drawings of alterations and improvements made in other machinery made by the firm.

Q. 4. Can you state what salary was paid to Mr. Locke during his said employment?

A. For a time it was twelve hundred ($1,200.00) dollars per annum, but subsequently it was advanced until it reached the sum of two thousand ($2,000) dollars per annum.

Q. 5. Please examine the letter here before you, dated October 28th, 1873, and marked Defendant's Exhibit No. 8, and state what the same is and all the facts connected with it, in your knowledge.

A. I have examined said letter, and believe it to be a true copy of a letter-press copy of a letter written by P. P. Lane, then senior member of Lane & Bodley, purporting to be a statement of the terms of a verbal contract existing between Joseph M. Locke and Lane & Bodley. I had no personal knowledge of this contract until a late examination of the correspondence it was discovered after a thorough search. I can find no record of any communication bearing upon this or any other contract touching these patent claims.

Q. 6. Please examine Defendant's Exhibits Nos. 1, 2, 3, 4, 5, and 6, and state what the same are, if you know.

A. I have examined said drawings, and find that they were made by Joseph M. Locke, and they represent the progress of ex-
199 periments in the construction of a satisfactory valve to control the supply and discharge of water from the cylinder of a hydraulic elevator. These drawings are owned by the Lane & Bodley Co., were made by Joseph M. Locke, and paid for in accordance with the terms of his engagement.

Q. 7. At or about what time did the completed valve, as exhibited in Exhibits 5 and 6 of the drawings before you and as also exhibited on page 10 of the Lane & Bodley catalogue in evidence, go into public use in your manufacture?

A. This valve was first put into use in August or September, 1872, displacing the disk valve, which had failed because of the gritty sediment in the water, and has been used continuously until this day.

Q. 8. What change, if any, has been made in said valve as you have used it since its first introduction?

A. Only such changes as would cheapen construction and facilitate repair without disconnecting pipes.

Q. 9. When were such changes made?

A. I believe most of these changes were made during Mr. Locke's employment.

Q. 10. Who made the working drawings for the construction of the first valve and the subsequent changes referred to?

A. The working drawings were made by Mr. Locke, but minor

changes were doubtless made without special drawings having been prepared.

Q. 11. Mr. Locke, then, remained in the employment of the firm nearly two years after the valve was completed and put in use, did he?

A. He remained something over a year and a half.

Q. 12. During that period did you continue to manufacture and sell these valves?

A. We continued to make these valves, placing them on all elevators made by the firm and occasionally selling them to rival manufacturers. These in several instances copied the valve, and are making them to-day.

200 Q. 13. Was Col. Locks aware of these facts which you have just stated?

A. He was aware of the continued manufacture of these valves, but I cannot say that he knew of others manufacturing this valve.

Q. 14. What have been the business relations of Col. Locke to the firm of Lane & Bodley or its successor, the defendant company, since the termination of his employment, as stated, in 1874? Please state fully and in such detail as may be within your knowledge.

A. After he left the employment of the firm, in 1874, he made some inquiries in behalf of the firm in Colorado on his way West, and at a later period became a consulting engineer, giving occasional service to the firm or company, with an office at Salt Lake City. Such services were paid for when a bill was rendered therefor. I find, however, by the books of the company that at several times advances were made. His relations as consulting engineer terminated in or about November, 1884. The advances I spoke of were temporary loans and fully settled for before the termination of his engagement. Sometimes these loans were cancelled in a few days and occasionally they ran for several months before claims for services or repayment were made. All credits claimed by Mr. Locke during this period were adjusted and allowed and passed to his credit. About the time this relation of consulting engineer ceased a claim was made by him for infringement of his valve patent; and have had no other connection with him, except lawsuits.

Q. 15. Please state the exact nature and circumstances of said claim for infringement as first made by Col. Locke and any other facts within your knowledge.

A. I have no personal knowlegde of the exact time and nature of said claim, believing it to have been made verbally by Mr. Locke. I remember distinctly the surprise occasioned by said demand when generally known, the valve having always been considered

201 without a patentable value, and several manufacturers having been told to use the valve if they chose, as we claim no patent on the same. Among these persons I will name: Crane Bros. Manufacturing Co., Chicago; Graves & Son, Rochester, New York; and Stokes & Parrish, of Philadelphia, all of whom were leading manufacturers, and at least one of them uses the same valve. Lane & Bodley, being early manufacturers, were visited by competitors, and their machines thoroughly examined, the firm fre-

quently offering them full opportunity to examine details. This was done with the full conviction that the public property in the machine was so clear that we might as well show them what we had as to let them copy by examination of machines in use. No account was ever kept of the number of valves made; nothing was added to the cost except the usual manufacturers' profit. The company make some machines upon which a royalty is paid, and a carefal account is kept with the same, and the amount of the royalty is included in the selling price. My first knowledge of a claim for a patent having been made upon this valve was upon its publication in the Official Gazette, and I remember well the surprise which all manifested that Mr. Locke had attempted to make such a claim, and that the Patent Office could grant it. I have frequently heard different persons connected with the manufacturing department speak of the valve as a copy of the Rankine valve, only modified to avoid the trouble experienced by the firm in elevators erected at the gas office. At this time they pumped their own water from the river, and the suction pipe was in sand. The quantity of sand pumped up soon destroyed the valve first made with metallic surfaces in contact, and it was necessary that the valve be made so that the parts subject to rapid wear could be rapidly and cheaply replaced. Mr. Locke made other machines which were abandoned; one, I remember, a set of compound drums, a mechanism for reducing the consumption of water when the loads were light. I have a clear recollection of the ridicule of some of the foremen upon
202 some of his mechanical devices. The proportions of some parts of the hydraulic elevators were excessively heavy, a certain cross-head pattern being a standing object of ridicule. These facts made a strong impression, and whatever his theoretical attainments may have been, I am sure his practical judgment was severely commented upon and not always adopted. It is the custom in our establishment not to adopt a new machine or change any existing construction without the approval of Mr. P. P. Lane.

The foregoing answer is objected to as being incompetent, immaterial, and impertinent. The compound of egotism, hearsay, and deduction contained therein are especially objected to.

Q. 16. Was the claim of infringement as made by Col. Locke verbally, as you have stated, made to you or in your presence or in your hearing?

A. It was not made to me nor in my presence or hearing. I became aware of the matter on the receipt of a communication from Mr. Locke referring to a conversation he had with Mr. Lane, when an explanation followed, and I was thus informed of his claim.

Q. 17. What was the substance and nature of the claim as made?

A. I understand it was a demand for a settlement for infringing his patent on the balanced operating valve.

Q. 18. Have you the letter referred to by you; and, if so, will you produce it and attach the same to your deposition?

A. The letter is on file. I will, if I can find it, attach the same as an exhibit.

Q. 19. Did Mr. Locke at any time previous to making this demand make any claim upon the Lane & Bodley Co. or give them any notice of his intention to make such a claim?

A. No such claim was ever made upon this company or upon me as an officer of said company, nor was notice given of his intention to make such a claim.

203 Q. 20. During the period of Mr. Locke's business relations with the firm and company, subsequent to February, 1874, did he, either in person, by representative, or in his correspondence, make any claim relating to the valve in dispute or the patent covering the same?

A. He made no claim that ever came to my knowledge.

Q. 21. During the period of his employment by the firm of Lane & Bodley, prior to February, 1874, did Mr. Locke claim the valve referred to as an invention or as a patentable device or claim any personal ownership in the same, and did he indicate to or inform the firm of his intention to apply for a patent for the same?

A. He made no claim to the invention of the valve or intimated his intention to apply for a patent in my hearing or that came to my knowledge; neither did he make such claim or express any intention to do so in any writing addressed to the firm.

Q. 22. What was the general custom and rule, if any existed, during the years 1871 to 1874, inclusive, with respect to the ownership of inventions of a patentable nature devised or produced by a draftsman or designing engineer employed by a manufacturing firm or company for the purpose of and with reference to the development or a particular line of manufacture in which said firm may be engaged.

Objected to as incompetent and immaterial, unless knowledge of the existence of the alleged rule is brought home to the plaintiff.

A. The general custom and rule was then and is now that all inventions or improvements made by the designing corps of a manufacturing establishment is the property of the establishment, and the patents are assigned by the inventor without additional consideration. This practice is so universally known that draftsmen rarely make any claim for a personal interest in such invention, the time of such talent and best mechanical thought being

204 considered at the service of the employer during the usual working hours. In special cases exceptions are made, but they are rare. The manufacturer feels justly that he furnishes the opportunity and frequently the necessity for the improvement, and the expense of experiments. Should another plan be adopted, charging the draftsman with the expense of the experiments and pay him a compensation for his successful invention, the cost of the failures would be very discouraging, and few improvements would result; therefore the above custom has for good reasons been generally accepted by both interests, employers and dra-tsmen.

Answer objected to as incompetent and argumentative and stating deductions and inferences.

Q. 23. Was Col. Locke's employment by the firm of Lane & Bodley in 1871 based upon any other or different understanding than the custom which you have stated?

A. Not at first, but I believe subsequently some understanding was had in reference to improvements he might make. This is the first, and I believe the only, exception to the rule ever made by the company or firm. Said understanding is fully set forth in the communication dated October 28th, 1873, and marked Exhibit 8, and heretofore referred to. It is, in my belief, that this exception was made that the firm might receive an interest in an invention that had been talked about, that would produce a hydraulic elevator that would use a quantity of water proportionate to the loads. Considerable expense was gone to in the development of a mechanism devised by Col. Locke which was not successful and which was never put into use. Finally the firm secured by purchase the right to use an improvement invented by Henry Pearce, of Cincinnati, which was an improvement in this direction. About the time Col. Locke was making these experiments other suggestions were made by outside parties, and I remember that Mr. R. C. M. Lovell, of Covington, Ky., took out a patent for a def-erential drum which was almost, if not exactly, similar to one Col. Locke had suggested—
205 in fact, at that time we believe that Col. Locke really had the best claim to that invention.

Answer objected to as incompetent, argumentative, and stating deductions and inferences.

Adjourned until Tuesday, January 26th, 1886, at 2.30 o'clock p. m.

TUESDAY, *January* 26, 1886—2.30 o'clock p. m.

Examination of CHARLES F. THOMPSON resumed:

Q. 24. Did you find the letter to which you referred, and, if you did, will you please produce it?

A. I have found the letter and herewith produce it; said letter is dated August 30th, 1884, and I make it Exhibit No. 9.

Cross-examination by THOS. A. LOGAN:

Q. 1. How long have you been secretary of Lane & Bodley?

A. Between three and four years.

Q. 2. What was your capacity in the company before you became secretary?

A. I conducted the correspondence, had charge of the credits, and supervised the order book.

Q. 3. Before the employment of Mr. Locke, in 1871, did you know personally of any efforts made by the Lane & Bodley Company to develop hydraulic elevators in order to meet the demand which you say had arisen at that time?

A. The first machine made by Lane & Bodly was made for

Henry Pearce, after his instructions, and I believe he induced the purchasers of the next machine to buy it. This second ma-
206 chine was in construction about the time Col. Locke became connected with the house. The growth of the elevator business and his connection with the house was contemporaneous.

Q. 4. The question intended to ask whether Lane & Bodley themselves, in their own behalf, had attempted the construction of any hydraulic elevator designed to meet the new demand for such machines before the employment of Col. Locke.

A. Lane & Bodley did not begin the manufacture of that type of elevator which best suited the popular demand until after Col. Locke's engagement.

Q. 5. Did they begin the manufacture of any such type at all before the engagement of Col. Locke, without reference to the question whether it best suited the demand or not?

A. I stated in the previous answer that the first elevator made by them was made prior to Col. Locke's engagement.

Q. 6. Do you know personally of any experiments or researches in any direction which were made by them prior to the engagement of Col. Locke which were made with a view to supply that want?

A. I have no personal recollection of seeing any such investigation or the results of it.

Q. 7. You have stated that, besides his primary duty of developing these elevators, his duties also covered the making of designs and drawings of alterations and improvements in other machinery made by the firm. Do you know of any duties devolving upon him by his employment other than these?

A. I know of none other, except if the supervision of assistants be classed with other duties.

Q. 8. Have you made search for the answer of Col. Locke to the letter of October 28th, 1873; and, if so, have you found it?

A. I did not make personal examination, but did through
207 a competent deputy have all communications examined and did personally see those that had the slightest reference to financial matters.

Q. 9. You are requested now, as secretary of this company, to make proper search, personally or by deputy, for the original answer of Col. Locke to the letter of October 28th, 1873, and produce the same before the further cross-examination of Col. Lane. Will you do this?

A. I have no objection to making further search, but, as a patient search has been made for such a paper, I cannot expect any different result.

Q. 10. Do you not remember reading an answer made by Col. Locke to this letter and participating in comments made thereon?

Question objected to for two reasons—first, it nowhere appeared that such a letter was ever written; second, if the design of the question is to lay the foundation for impeachment or contradiction

of this witness, the exact circumstances and detail of time and place should be given him.

A. I have no recollection of ever seeing an answer.

Q. 11. Was the only cause of the failure of the disk valve the gritty sediment in the water, so far as you know?

A. I believe it was. Other objections to the valve, such as excessive friction due to unbalanced pressure, might have been relieved, as often done, by an auxiliary valve.

Q. 12. Then there did exist excessive friction, did there not, which was also a defect in the working of the disk valve?

A. I believe it did work hard and I am satisfied the valve would never have become popular.

Q. 13. Do you not know it to be a fact that at the outset of Col. Locke's employment Col. Lane's predilections were all in favor of a disk valve, but Locke remonstrated against its adoption because of excessive friction, which could not be overcome, together with the springing of the valve, but Col. Lane insisted upon its adop-
208 tion and retention until, after frequent trials, he was compelled to abandon it?

A. I know that Col. Lane did favor the disk valve, but I do not know the extent of Col. Locke's objections. Col. Locke designed the valve, and certainly in its proportions he had some of the objectionable features under his control. Perhaps the valve would have worked better had he been more favorably disposed toward it; possibly for this reason Col. Lane insisted on the thorough trial.

Q. 14. Do you know personally of any personal attention or investigation given by Col. Lane to the subject of an improved valve for such elevators?

A. I know personally that the consideration of the construction of a valve occupied a great deal of his thoughts, but what investigation he made or researches on this subject I am not informed.

Q. 15. Do you know of any sources of information on the subject which he had other than Col. Locke?

Question is objected to as irrelevant and immaterial.

A. There was in the drawing-room quite a collection of books, some encyclopædias, a large collection of Patent Office Reports, which must have offered some information. He had quite an extensive experience, and may have taken other advice of machanics in the employ of the firm.

Q. 16. Can you fix approximately the date at which he commenced his readings and investigations on this subject?

Objected to as irrelevant and immaterial and improper cross-examination.

A. No, I cannot.

Q. 17. Referring to answer 15 in the examination-in-chief, about what time, as nearly as you can recollect, did Col. Locke make the set of compound drums therein referred to?

A. In February, 1873, the drawings were made for those compound drums.

209 Q. 18. In relation to the cross-head pattern referred to in answer 15, which you say was a standing object of ridicule, was it not a fact that after objections were made to the original pattern and a substitute was tried, the substitute had to be abandoned and the original device adopted, showing the entire accuaracy of Col. Locke in the premises?

A. No, sir; it is not a fact. The real facts are that the cross-head pattern of the original machine, with the material in it, in compression, was used so long as that type of machine was made. When rebuilding this machine and this member coming in tension, a much lighter pattern was used and it failed, and a stronger pattern was made and is successfully used, but is of much lighter weight in tension than the ridiculed cross-head was, used in compression in a much more favorable way for the resistance of strains.

Q. 19. *In* what was it in the original machine to excite ridicule?

A. Lack of scientific economy of material.

Q. 20. In other words, there was too much material; was that it?

A. Yes, sir.

Q. 21. Who are the parties that ridiculed it?

A. I remember hearing some of the foremen doing it; not so much the man as the production.

Q. 22. Is it the custom in the Lane & Bodley establishment to permit subordinates in position to ridicule their superiors in position for their work?

Objected to as irrelevant, immaterial, and as improper cross-examination.

A. It is not a question of inferiors and superiors, but the personal nature of the individual, which no firm or corporation can control.

Q. 23. If there was a serious error of construction in this device, why was not Col. Locke remonstrated with for his want of

210 capacity? If there was no serious error in the device, why did you, as an officer of the company, tolerate such impertinence?

The question is objected to as argumentative, and the latter portion of the same is irrelevant and immaterial and improper cross-examination.

A. The company did not exist at that time. I was not a member of the firm and had nothing to do with the harmony of individuals.

Q. 24. I understand you to say that the receipt of the letter of Col. Locke, dated August 30th, 1884, Exhibit No. 9, gave rise to your first information of his claim for infringement. Is that so?

A. That is my recollection and belief.

Q. 25. Before the receipt of that letter or after it, did you ever have any personal conversation with Col. Locke in reference to the infringement of that patent?

A. I do not remember that I ever had any conversation with

Col. Locke relating to the valve patent or the infringement of the same.

Q. 26. Did you ever have any conversation with him as to the novelty of the device or whether it contained patentable novelty before his application for a patent?

Objected to as irrelevant and immaterial.

A. I have no recollection of any such conversation.

Q. 27. Then, when you testify that up to the receipt of the letter of August 30th, 1884, you never knew he made any claim for infringement, and when you further testify that up to the date of the application for the patent he never made any claim for a patentable novelty in the invention you mean simply, do you not, discarding all hearsay in the matter, you never had any conversation with him on the subject?

A. As I said before, I do not recollect of having any conversation with him about it.

Q. 28. In answer 14 in chief you refer to lawsuits with
211 Col. Locke. Is it not a fact that the only lawsuit besides the present which the company have had with Col. Locke was a replevin suit brought by him against the company, in which he got a judgment?

A. The answer as I recollect it was a lawsuit in the singular. It is a fact that the replevin suit is the only litigation except the present one in which these two parties were concerned. Our relations with Col. Locke have always been amicable and pleasant.

Q. 29. Aside from hearsay, did you have any opportunity of knowing what were the terms and duties of Col. Locke's employment?

Objected to as involving a question of law.

A. I had no opportunity except by hearsay to hear and know of verbal expressions of terms, but anything written I would undoubtedly have seen.

Q. 30. In answer 15 in chief you say other manufacturers are making the valve. Who are they?

A. Graves & Sons, of Rochester, New York; Wm. Merkel & Co., of Louisville, unless they have lately ceased building hydraulic elevators and making a valve very similar to it.

Q. 31. In answer 15 in chief you refer to a valve at the gas works which gave trouble and had to be changed. Was that not a disk valve?

A. I believe it was.

Q. 32. What valve do you refer to when saying the valve first made with metallic surfaces in contact was soon destroyed?

A. The disk valve I mean; the tightness was destroyed.

Q. 33. At your convenience, will you refer to your books and hereafter attach a statement, giving the names of the other draftsmen, including Mr. Watkins, who were employed during the period of Col. Locke's employment and their period of services respectively?

212 A. I will. A. E. Watkins, Nov. 16, 1872, to Oct. 15, 1873; C. A. Bain, Oct. 28, 1873, to May 15, 1875.

Q. 34. In order to avoid a possible misunderstanding of your testimony, I wish to ask you if it is not a fact that it was from Col. Lane you derived your first knowledge that Col. Locke made claim for infringement, and that Col. Lane's communications to you on that subject was not made until after receipt of the letter dated August 30th, 1884, Exhibit No. 9?

A. I had Col. Lane's explanation after the receipt of the letter that Col. Locke had made a demand upon him involving the use of the three-way balanced-valve.

(Signed) CHAS. F. THOMPSON.

STATE OF OHIO, }
Hamilton County, } *ss:*

I, Henry H. Finch, a notary public, in and for the county and State above-named, duly commissioned and qualified, do hereby certify that the above-named Charles F. Thompson was by me first sworn to testify the truth, the whole truth, and nothing but the truth, and that the deposition by agreement of parties was reduced to writing by me and subscribed by the said witness in my presence; that the foregoing is a true and correct transcript; that the same *were* continued from day to day as above set forth, and was taken at the time and place specified, and that I am not counsel, attorney, or relative of either party or otherwise interested in the event of this suit.

In testimony whereof I have hereunto set my hand and official seal this 27th day of January, A. D. 1886.

HENRY H. FINCH,
Notary Public, Hamilton Co., O.

Notary fees, $18.00, paid by L. M. Hosea.

213 The depositions of Charles F. Thompson and Col. P. P. Lane, witnesses called in behalf of the respondent in the above case, being additional testimony taken in behalf of the respondent by agreement of counsel, the service of notice having been waived, at the law offices of L. M. Hosea, Nos. 65 and 66 Johnston building, S. W. corner Fifth and Walnut streets, Cincinnati, Ohio, this 3rd day of May, 1886.

Present: Hon. T. A. Logan, attorney for complainant, and Maj. L. M. Hosea, attorney for respondent.

Charles F. Thompson.

CHARLES F. THOMPSON, a witness called on behalf of the respondent, being first duly sworn, deposes and says as follows:

Direct examination by Mr. HOSEA:

Q. 1. You are the same Charles F. Thompson who has heretofore testified in this case, are you not?

A. I am.

Q. 2. Will you please state, from the books of the Lane & Bodley Company or from any other sources of information which you possess, the dates and facts connected with the Bare, Shinkle & Howell elevator? State when the order was received, when the work was commenced, and the general dates of its progress.

A. I find by reference to the books that the order was taken October 28th, 1871; that the first work done, for which Lane & Bodley Company paid, was on laying of the water connection by the city water works on November 23rd, 1871, which work was done some little time prior to turning on the water. The first work I find done by our own employees was a further extension of the water-works pipe on December 5th, 1871. The remainder of the pipe con-
214 nections to the machine was done about December 30th, the same year, indicating the final attachments of the pipes to the machine itself and approximately the date of its first test. I find that the construction of the machine in the machine shop, the turning of the plungers, the forging of the connecting rods which bind the several sections of piston together, was done December 7th, 1871. The first time charged in the shop for work on this machine in any of its books is November 22nd, 1871, which was a laborer's time in the wood shop. I find work done on the chain counter-balance or rope counter-balance December 15th, 1871. On December 19th, 1871, I find the first entry for work on hydraulic valves. The well or pit for reception of the cylinder was furnished by the purchaser, and I cannot give the date at which said pit was finished or begun.

Q. 3. When were your own men first put at work at the place where the elevator was erected?

A. December 6th is the first date that I can identify as having been done at the building where the elevator was erected.

Q. 4. Please state whether or not you had any conversations with Mr. Locke about the time of—that is, immediately before or after his employment, relating to the subject of hydraulic elevators; if yea, please state the substance of such conversations on the part of Mr. Locke.

A. I had a conversation with Col. Locke in the office of the Lane & Bodley Company prior to his engagement, in which he spoke of the feasibility of counter-balancing the weight of the plunger and the column of water in these machines, and he confirmed the availability of the device by citing its application to the balancing of roller curtains in theatres, a fact which impressed itself on my mind, as I had never been inside of a theatre to see the machinery for operating curtains, etc. This conversation was purely a voluntary one on his part, and I am confident represented the idea which he expected to develop when employed by the Lane & Bodley
215 Company in connection with these elevators. I never heard of any other improvement proposed by him save this prior to his engagement. It was an important improvement, and while not new, yet I believe had not occurred to any of those persons connected with the establishment, mainly, however, because the machines had been of a short travel.

Objection by counsel for complainant to so much of the above answer as states to what, in the opinion of the witness, the improvement designated by Col. Locke refers, as being simply conjecture.

Q. 4. What circumstance led Col. Locke in that conversation to apprise you of the inventions or improvements which he had made or intended to make relating to hydraulic elevators?

A. I cannot state the circumstances, save that he was waiting to see Mr. Lane, and, having an idle moment, I sat down with him and he voluntarily made those stat-ments of possibilities and the facts connected with the theatre. Possibly, being young, he found me willing to listen and possibly ignorant, and I have no doubt I was an eager listener, as he is an attractive talker. I had been several years, at this time, in the employ of the concern, with something of a confidential familiarity with its affairs and its management, and I was so well impressed with his ability that I certainly did nothing to oppose his engagement.

Q. 5. In those conversations did Col. Locke refer in any way to the valve or regulator of hydraulic hoisters?

A. He did not. The valve was not considered a question of importance, it being supposed that many available methods of constructing a valve existed which would answer the purpose, but the counter-balancing was of absolute necessity in tall buildings and was the leading necessity for the introduction of these machines in Cincinnati merchantile houses.

Q 6. Col. Locke has testified that prior to his engagement he made a number of visits with Col. Lane to the Bare, Shinkle
216 & Howell hoister, then in course of erection, as he testifies. Do you know anything of such visits, or can you state whether or not such were made?

A. I cannot say that visits to the site were not made, but I can say positively that no visits were made prior to his engagement, where the machine could be seen in position in the course of erection. This is amply proven by records in time books of the working progress.

Objection by counsel for complainant to the latter part of this answer, beginning with the words "that is amply proven," etc.

Q. 7. Please state whether the Rankine book referred to in this record or any other copy of the same was in the drawing-room of the company prior to Nov., 1872; and, if so, state the facts in that connection.

A. A copy of the work belonging to Mr. Charles A. Bauer was constantly in the drawing-room during his first engagement, and I was very familiar with the book, as it was generally to be found lying on his table. It is presumed that when he left the employ of Lane & Bodley he took it away with him. His first engagement terminated prior to that of Col. Locke's.

Q. 8. Please examine the copy of the Vaughn patent in evidence and state when the said patent was known to or in the possession of the Lane & Bodley Co.

A. I find on the copy of the patent of James A. Vaughn the

Lane & Bodley Co. office stamp of Jan. 15th, 1873. The year, of course, is wrong, as that is prior to the issuance of the patent, but I can explain this by saying that the type wheel of that stamp has no more years on it than 1873, and pending a change of wheels on my part the date continued to be used. It was Jan. 15th, 1874. I believe the attention to this patent was called by the receipt of a circular which is attached to said patent, stamped in the same way, Jan. 9th, 1873. In the interval a copy of the patent was obtained
217 from the Patent Office. I remember the impression this valve made as likely to cause us trouble in the use of the valve then in construction. I do not believe that any communication was ever received from Vaughn that we infringed his patent, but it was for a long time expected.

Objection by counsel for complainant to the latter part of last answer.

Q. 9. Col. Locke has referred in his testimony to the Judson governor patent as having been cited by Col. Lane with reference to the possible infringement of the regulator valve in controversy upon said patent. Can you state what governor patent of Judson's is referred to or what patent answering that description was known to the firm or company at or about the time of the introduction of the regulator in controversy?

Objection by counsel for complainant to this question as generally incompetent.

A. I remember Junius Judson, of Rochester, N. Y., as being the sole maker of centrifugal governors for the first few years of my connection with Lane & Bodley. He had a patent on constructing the edges of the valve so as to give a graduated opening for the steam. It was a matter of notorious litigation, but it is my conviction that the patent had expired long before the commencement of *of* hydraulic elevators, because about that time other makers of governors had cultivated a large business and had greatly broken in upon Judson's monopoly. I find the patent to have been issued on Nov. 3rd, 1850, the lawful duration of patents at that time being 14 years, and it was subsequently extended 7 years; consequently the patent expired and was public property Nov., 1871. Steam-engine building manufacturers the country over were familiar with this litigation, many persons were involved, and the house of Lane & Bodley was no exception.

Objection by counsel for complainant to all of the foregoing answer, except that part referring to the date and extension of the patent, as being incompetent and hearsay.

218 Q. 10. Will you please examine the book here handed to you, marked Exhibit No. 7½, and state what the same is?

A. It is a record of calculations made by Col. Locke, as engineer, when in the employ of the Lane & Bodley Company, intended to be a record of sketches of calculations for preservation.

Q. 11. Will you please now examine the several so-called blotters? State generally what the same are and identify each as nearly as possible by its date of use in the drawing-room, and mark the same as exhibits, consecutively, in the order of their dates, in red ink, beginning with the No. 10.

A. These folded sheets of manilla paper are called blotters by the author of them, Col. Joseph M. Locke. Some of them bear dates in his own handwriting. They are supposed to contain preliminary sketches or ideas for more complete development thereafter. It was expected that the blotter or book should contain all such matter. Possibly these sketches may not be considered of sufficient value to have encumbered the book, as some of the calculations on the same subject are to be found in the book referred to in the last question. One of these blotters, containing sketches of fusees, drum, counter-balances, weighted-rope counter-balances, and piston valves and disk valves, I identify as being the first or second of the series. By comparison of dates with similar record in the book Exhibit No. 7½, I call this one Exhibit No. 10, as of date of December 19th, 187[illegible], and put my initials beneath, all in red ink.

The next blotter in position is dated February 1st to —— —, 1872, with the figures No. 3 in pencil; by whom made I do not know, unless made by Mr. Locke. This I mark Exhibit No. 11, and will be found to contain calculations relating to Carabou stamp mill. It also has the sketch of position of valve and some
219 parts of an elevator for the Cincinnati gas works and other matter which I cannot now identify.

That which I consider next in series has been torn, the first page removed. I consider it as of date between February 1st and June 21st, 1872, upon the page of which I place the number 7, being Exhibit No. 12, upon which there is a pencil sketch of a valve, consisting of two pistons, operated by arms sliding in a cam plate. On the same diagram is the sketch of a house, probably a personal matter of Mr. Locke's. On another page I find at least four ideas of an operating valve represented. I outline these by red-ink lines, marking them A, B, C, and D. One of these, marked A, is a piston valve three-way pattern, without graduating devices, with leather packing, evidently intended to be used in a vertical position. There is an attachment on this sketch which looks as if it was probably intended as a cushioning chamber. That sketch marked B consists of two rollers, one of which is perforated and covered with a flexible web. When unrolled would cover holes and when rolled up would close them. The third sketch, marked C, is a tubular moving cylinder, with perforations, this cylinder moving through cup packing, and the fourth sketch, marked D, is also a diaphra-m valve, but the rollers are not placed on the same plane, each roller and diaphra-m being placed in a separate chamber. Other sketches represent a consideration of the Armstrong plan of elevators on page E, representing a contemplation of the Armstrong system of hydraulic elevator, and also of the rack and pinion vertical cylinder type, marked F, such as was being made about that time by Warren

Warner. Well, I guess that is all I know about this thing. I will mark this Exhibit No. 12.

Q. 12. Before passing from Exhibit No. 12 please state more particularly what the valve-moving device to which you first referred in connection with this exhibit was to be used with—that is, what form of valve or regulator as represented in the more complete drawings introduced as Exhibits 1 to 6, inclusive.

220 A. I understand this drawing to be a representation of the valve-moving mechanism constructed for the valve described on Exhibit No. 2, dated February 15th, 1872.

Q. 13. Do you understand the devices which you designated as B, C, and D to be those referred to by Col. Locke in the course of his testimony as the devices that were under consideration during the period indicated by you, as to one of which he makes and submits a complete sketch, to wit, a piston valve something similar to figure C?

A. The piston valve in Mr. Locke's sketch is made different from the design identified as figure C, but the other two sketches, B and D, represent valves he spoke of as having been under consideration in his testimony.

Q. 14. Now, proceed with the general answer, please.

A. The next blotter is marked Exhibit No. 13, dated by the other June 21st, 1872. It contains sketches of the Armstrong system of elevator, or is called on some of the pages "a hydraulic hoister, with motion accelerated by pulleys." There are some sketches showing position of a disk valve with a vertical hoister and dimensions of parts of a piston valve. On page marked 14 I find a sketch, adjoining which is a padlock, with the word "balanced" marked on the hasp. I cannot identify to which form of valve it belongs.

The next blotter, which I mark No. 14, is also without a date, but I establish the date as of Oct. 18th, 1872, or later, because of the sketch of a bit for spoke facer on page 2, belonging to a machine, which on the book marked Exhibit 7½ is more fully described on page 80. This Exhibit No 14 contains but little with reference to elevators, but on the 3rd page from the last is a completed sketch of a smaller size valve with figures. This valve represents practically the latest construction.

The further taking of these depositions was then adjourned to 2.30 o'clock this afternoon.

221 MONDAY AFTERNOON, *May 3d*, 1886—2.30 p. m.

The further taking of these depositions was then resumed in pursuance of the adjournment, as above.

Direct examination of CHARLES F. THOMPSON continued:

WITNESS: The blotter which I marked Exhibit No. 15, signed with my initials, I find should have a date of about March, 1872. I suppose I had them piled in the order of their dates, but this should have been considered before the others. I fix this date by reference to spoke-lathe drawings and Rouse machine drawing, with which some of the sketches on this blotter have relation.

The blotter which I mark Exhibit No. 16 is also out of place as to its order in the series. I find by reference to a memorandum in the book (Exhibit 7½), kept by Mr. Locke, that the dates of the organ tests is somewhere about Jan. 1st, 1872, matter concerning this organ test appearing on the 1st page of this blotter.

The next blotter is marked No. 7, and bears date Sept. 10th, 1872, in Mr. Locke's own handwriting. This I marked Exhibit No. 17.

I mark as Exhibit No. 18 a blotter No. 8, dated from Jan. 4th, 1873, in Mr. Locke's own handwriting. That disposes of these.

Q. 15. Do you know anything of the origin or use by Mr. Locke of the padlock device shown in preliminary sketch in Exhibit No. 13?

A. I do not know where the device originated or how long it had been used by Mr. Locke. It bears an evident relation to his name, but I have seen it on many drawings of his making—on some wood-working machinery drawings, particularly: I remember upon a spoke-lathe drawing, the purpose of which was a simple rebuilding of a lighter machine in which no invention was made by any
222 one, the aim being simply to make a heavier machine. It was used as a foundation for his signature upon the drawing, I merely as a fancy piece, suppose.

Objection by counsel for complainant to the latter part of this answer.

Q. 16. Please state a little more fully what these blotters are; whether similar blotters were made and used by other draftsmen in your employ, and what relation the work and sketches and calculations, etc., upon these blotters bore to the ultimate working drawings and the structures ultimately produced.

A. These blotters are simply memoranda sheets, in whatever of the various forms they have been used in the drawing-room before and since that time. They represent the discussion of the devices from mathematical and diagramatical standpoints. It is apparent on many of the sheets that the sketches were made as verbal discussion proceeded. This seems to be shown by the hasty character of the sketches. It has been the custom of Lane & Bodley to preserve all sketches and calculations of work contemplated or produced in the drawing-room. This refers to estimates of weights for public bidding as well as for machines proposed to be built. The collection of such memoranda and blotters is of very great value, as one will readily suppose. I believe that since Col. Locke's time the method of keeping the sketches in the books and all calculations has been closely followed. The books now used are made of paper specially intended for sketching, and, of course, furnished by the company.

Objection by counsel for complainant to all of said answer which attempts an interpretation or characterization of the above sketches.

Q. 17. Referring now to Exhibit No. 12, and particularly to the device marked A thereon, what bearing has the existence of such

sketch in such connection upon the history of the device in controversy?

223 Objected by counsel for complainant to this question, because it is calling the witness'*es* opinion to pass a legal deduction upon the fact.

A. It seems to me it fixes the date or a date at which that form of valve and several other forms were discussed, none of which at that time were adopted.

Q. 18. The sketch referred to has no marks upon the same indicating the sizes of the parts, but upon the page which you letter "E" I observe another sketch, apparently of the same device, in which figures apparently indicating the dimensions are placed. What interpretation do you put upon the existence of such figures upon this blotter and in that connection?

Objection by counsel for complainant on the same ground.

A. This drawing on page E was in my belief intended for a construction drawing, the dimensions being filled in prior to the making of the construction drawing by the draftsman.

Q. 19. I would infer then from your answer that such figures were placed upon the sketch after the adoption of the device was determined upon; is this correct?

A. I cannot think that your inference is correct, that the sketch signified that this valve was adopted. It simply indicates a stage in the progress from the simple sketch representing an idea to the finished working drawing, in which all sizes were marked. I notice the travel of the valve is marked and the length of the piston, all of which are simply preliminary memoranda before the finished drawing was made. The making of the drawing, the finished working drawing, would not constitute adoption.

Q. 20. These figures, then, as I understand you, represent the first attempts to embody in a sketch a preliminary idea; is that correct according to your understanding?

A. I should say that that sketch represents an idea sized ready for practical use if occasion should warrant.

(By Mr. LOGAN:)

Q. 21. This sketch refers to page E?

224 A. Yes, sir.

(By Mr. HOSEA:)

Q. 22. But my question had reference to both the sketches last referred to—that marked A in connection with that on page E. With this explanation, will you please answer my preceding question?

A. Yes, sir.

Q. 23. Col. Locke's testimony is, in substance, that the device in controversy was invented and reduced to drawings complete prior to entering the employment of the Lane & Bodley Company, and at the request of Col. Lane he brought his said completed drawings to

the shop and from them made the working drawings, Exhibit No. 4 being a copy of his said working drawings with the graduating device omitted. What bearing, if any, does the existence of the blotter sketches A and E have upon the statement of Col. Locke?

Objection by counsel for complainant to this question for the reason stated in the last objection, to wit, that it is asking the witness to absorb the functions of the court and to decide for himself what bearing one piece of evidence has over another piece of evidence. The question is further objected to in grouping the testimony of Col. Locke so as to present an announcement by him that he had complete drawings made of his device before entering the employment of Lane & Bodley.

Q 23. In view of the objections, I will modify the question with the explanation that by the term completed drawings, as used in the question, I mean sketches and not working drawings.

A. It is my belief that the sketch E was a direct precedent of the drawing marked Exhibit No. 4, and that the drawing was made from the sketch on page E, all sizes not agreeing, which would scarcely be expected, as a drawing once made to scale is very different from one made in an off-hand way.

225 Cross-examination by Mr. LOGAN:

Without waiving any objection to any of the foregoing testimony, counsel for complainant proceeds to cross-examine the witness.

X Q. 1. Who has had possession of these various sketches since Col. Locke left the employment of the company?

A. They may have been in the drawing-room.

X Q. 2. When did you first examine them with a view to producing them in evidence?

A. Subsequent to the testimony given before by myself.

X Q. 3. Did you have access to them before your previous testimony?

A. I did not know they existed. I had asked for all papers, and this book, Exhibit No. 7½, was all that was produced. After hearing Col. Locke's testimony regarding a drawing that was not shown up I caused further search to be made, with a view to finding said drawing, and it took two searches to gather all these blotters. The first search, announced as complete, did not bring them all. They were evidently stored away in an unused corner and very dirty when I got hold of them.

X Q. 4. Who did you ask on the first occasion for all the papers concerning the case?

A. One of the young men in the drawing-room.

X Q. 5. What was his name?

A. Baldwin.

X Q. 6. Is he in your employment now?

A. No, sir; he is temporarily absent.

X Q. 7. When will he return?

A. He is engaged in the city at present.

X Q. 8. Do you expect to re-employ him in your concern?

A. Yes, sir.

X Q. 9. You have stated with respect to sketches con-
226 tained in these books that many of them evidently were made during the discussion of the question at issue. With whom was such discussion had?

A. I did not intimate the discussion was more than a mental discussion of the designer. It may have been with individuals.

X Q. 10. You say that it is apparent that many of the questions were made as verbal discussion proceeded. With whom was such verbal discussion had?

A. The variety of sketches on any one of these blotters is so great and in some instances relate to so many different machines that on wood working machinery, for instance, it may have been with the foreman of that department. Col. Locke has testified, however, that his authority was solely from Col. Lane, and I believe that any discussion was largely held with him.

X Q. 11. Can you point out any of the sketches in any of the books that convey to your mind any suggestion that they must have been made during a verbal discussion with Col. Lane?

A. No, I cannot.

X Q. 12. Referring to those sketches, which you say bear evidence of the progress of the development of the regulator valve in controversy, is it your impression that all such verbal discussions and sketches incidental thereto were made with and for Col. Lane?

A. Yes, sir; it is my belief that they were made for Mr. Lane's examination.

X Q. 13. Did he ever tell you that he had seen such sketches or had such discussions?

A. Not that I remember of.

X Q. 14. Do you know of any other sketch book or any other memorandum now in the possession of the Lane & Bodley Company bearing upon this investigation?

A. I do not.

X Q. 15. Have you made search or caused to be made for all such?

227 A. Yes, sir; I asked that everything in those four walls should be produced, and everything is here that has been given me.

X Q. 16. Have you found the sketch—the original of the sketch—a duplicate of which appears in Col. Locke's testimony, marked "Locke Sketch 1"?

A. No, sir; I have not. It was the search for that drawing that produced these blotters. We cannot account for its absence and would like to find it.

X Q. 17. What books are those wherein you find the dates that you have mentioned in connection with the Bare, Shinkle & Howell elevator?

A. In time books I have with me by my side.

Books exhibited to complainant's counsel.

WITNESS: December 4th, 1871. That is the foreman's entry on which pay is credited to men and labor charged.

X Q. 18. This entry reads thus: "McIntyre—Bare & Shinkle, one hour; No. 5 injector, one hour."

A. On the next page is charged to Bare & Shinkle, page 237.

X Q. 19. Where is the book, whether it be ledger, cash book, or journal, wherein the company make out their account against Bare, Shinkle & Howell for work done on that elevator?

A. It is at the works somewhere.

X Q. 20. Will you be good enough to produce to-morrow the book of original entries, showing the account that your concern had against Bare, Shinkle & Howell for work done upon that elevator? I mean the account from which you rendered your bill to them.

A. The bill was a matter of contract.

X Q. 21. As to price?

A. Yes, sir; consequently the book entry will simply fix the date of charge, as well as the contract price.

X Q. 22. Will you get me the contract and whatever you can on that subject?

228 A. Yes, sir; I will make a note of it.

X Q. 23. I understand you to say that in a conversation had with Col. Locke before his engagement he spoke of putting in an improvement which you considered an important improvement. Please state more specifically what that improvement was to be.

A. A system of counter-balancing the weight of the plunger and column of water so that the elevator would have the same lifting capacity at the top of the house as at the cellar floor. All the machines that had been previously made by Lane & Bodley—the only machine previously made by Lane & Bodley—would not lift so great a load at the top as it would start with.

X Q. 24. You also say, substantially, in that connection that you gave particular attention to this proposed improvement and paid no particular attention as to the form of the regulator valve, as it was supposed "that many available methods of a valve existed that would answer the purpose."

A. Did I say that?

X Q. 25. I copied as nearly as I could and if the notary will turn to the page I will get the exact words.

X Q. 26. The notary now reads the witness' answer upon that subject. Having heard your answer read, I ask you now to tell me which of the available methods that you now refer to were then in use and by whom, so far as you know.

A. That answer was an opinion of mine and as explaining why I had no curiosity about the valve. I simply said so because it was not considered an interesting question. I simply wished to show that Col. Locke had talked to me about counter-balancing and added, in an answer to a question, that nothing had been said about a valve.

X Q. 27. I did not quite understand the answer to be as you now explain it. My understanding is that you stated as the great reason

why that conversation impressed itself so upon your memory
229 was that Col. Locke told you at that time of a scheme of counter-balances, and that was entirely a new subject to you and one in which you took great interest. I understood you further to say that it could not have been the fact, in the nature of things, that you should talk about a valve at all, because, as a matter of fact within your knowledge at that time, many available methods of a valve existed that would answer their purpose. Now, then, I wish to know from you, first, am I correct in my understanding; and, if so, tell me what valves you refer to? If I am not correct, then I want to know whether the whole thing is a matter of opinion on your part.

Objection by counsel for respondent as being argumentative and improper cross-examination.

A. There were two questions, one of which related to the conversation, and I said nothing about the valve. On the second question, when asked whether Col. Lock had said anything about a valve, I added my opinion as to whether I did not expect anything to be said about a valve, as no stress or anxiety existed upon that subject. The confidence in the success of any valve may have been entirely misplaced, and that opinion may have been wrong, that the valve was not of great importance at that time. To answer the question directly, the slide-valve is still in use for hydraulic elevating machines, and doubtless valves were in use for hydraulic cranes in Bessemer steel works prior to that time that proved their efficiency and which are not conflicting with the Locke patent.

X Q. 28. Did you ever have any other conversation with Col. Locke after his employment by the company in relation to the valve which is now the subject of his patent?

A. Not that I can now remember.

X Q. 29. You have spoken of Mr. Charles A. Bauer having a copy of the Rankine book to ascertain whether he had left his copy of the book in your factory, and did not he tell you, on the contrary, that he had taken it out with him?

230 A. Yes, sir; that is true. He notified me to come and see him, that he would like to tell me more about it.

X Q. 30. Is it not a fact that Mr. Bauer's engagement terminated entirely before Col. Locke's began?

A. Certainly; the date was fixed in the first testimony.

By agreement of parties the further taking of these depositions was adjourned till Tuesday, May 4th, 1886.

TUESDAY MORNING, *May 4th*, 1886.

The further taking of these depositions was this day resumed in accordance with the adjournment of yesterday.

Cross-examination of CHARLES F. THOMPSON continued:

WITNESS: In my answer to the second question yesterday I stated that the first work for which Lane & Bodley paid was the laying of

the water-pipe connection of the street main by the city water works. I find this to be a mistake, as the purchaser of the machine furnished this connection himself and paid for it.

X Q. 31. Have you brought with you this morning the contract and books which were requested of you yesterday?

A. I could not find the contract or order of Bare, Shinkle & Howell, but I have got the Lane & Bodley letter book, which contains the last proposition to them, which I believe was verbally accepted, as no record now appears on our file of a written acceptance, and from which the order was entered on the order book the following date. The date of this proposition is October 27, 1871, as appears by our letter book here produced.

(The witness here produces letter book for examination.)

X Q. 32. How did you discover that the water connection was finished and paid for by Bare, Shinkle & Howell?

A. I sent a messenger to the water-works office some time
231 ago and he examined the records and made a report in my absence. I received from another party the date of the connection, and as our later business has involved the furnishing of the water connection ourselves, I assumed that we had furnished it, but on reading this contract this morning I saw that the stipulation was that the purchaser furnished the water connection himself.

X Q. 33. I find by this letter of October 27th that Bare, Shinkle & Howell had to "finish" the excavation to receive the cylinder?

A. It is "furnish" not "finish."

X Q. 34. Do you know when that excavation was begun?

A. No, sir; I do not. I endeavored to find by inquiry of Messrs. Bare Shinkle & Howell, but they informed us that all their books were lost in the flood of 1883, and they sold them to the scrap-paper dealers and have no record of the transaction.

X Q. 35. Can you tell me by reference to any of your books or other memoranda when it was that your company made the casing which was placed in that excavation?

A. The pattern-makers' time book, which would fix the date of the patterns for this work, I find mutilated, covering a period from about October to the first of January; by whom I know not. It may have been the natural wear and tear of the book, but I find the pages missing. I expected to show by them the date of the construction of the patterns. Neither can I find the foundry book, which would show the date of the castings. From the best information I have, that book was lost in the flood of 1884. I find in the machine-shop time book labor of men who operated certain lathes which did this class of work, such as the facing of the ends of the cylinders, and which convinced me that the work was done within the periods I shall point out in this time book. The time of John Girden operated on shafting lathe, which lathe was used for a number of years exclusively and solely for this purpose. I find an entry on November 25th: Girden, hoister, nine hours and ten minutes. On the next day time is credited to a man named
232 Beard, who had charge of the erection of the machine. I

think at the outset he worked in the shop as a machinist. I think his duty was to drill the flanges on the pipes. On November 28th Girden's time is credited to hydraulic elevators, ten hours and ten minutes; also on the 29th the same; also on December first and on the second. Two or three other names in this same period I find credited to hydraulic hoister. On the fourth Girdsen worked on hydraulic hoister; also on the 6th. On the 6th I find the name of a man named Knickerbocker credited on a platform—hoister platform. Girden's time seems to be missing from the 6th to the 9th. On the 9th his time is credited again, hydraulic hoister, nine hours and ten minutes, Saturday. On the 11th he worked on the elevator seven hours and a half. I find later, December 15th, the names of men who operated small lathes: Louis Hommel, hydraulic hoister.

Mr. HOSEA: Do you wish all that, Mr. Logan?

Mr. LOGAN: No, sir; the above reference to dates as given by the witness is objected to by counsel for complainant as irresponsive and incompetent.

Mr. HOSEA: The objection is objected to by counsel for defendant, inasmuch as the matter was called for and allowed to proceed without previous objection by counsel for complainant.

Mr. LOGAN: Complainant's counsel replies that by reference to his question it will be seen that no such dates were called for, and, next, the witness was allowed to proceed in pursuance of the rule which has been announced frequently during the progress of this record, to wit, that a witness cannot be interrupted in the middle of his testimony to interject an objection.

X Q. 36. Is it not a fact in the order of construction that the casing would be the first thing made in your concern for that elevator?

A. It is generally so, but not always.

233 X Q. 37. Was it not the fact in this instance?

A. I cannot say from the lapse of time.

X Q. 38. Was not the casing first placed in the pit and put in position? To do that was it not necessary that it should be filled in with earth and packing to hold it in position?

A. Certainly the cylinder was put in first; it is the foundation of the machine; but whether it was made first or not is not determined by the fact that it may have been put in first. The purchasers of the machine furnished the well and were responsible for the well. All hydraulic elevators of this kind have not the well filled up; it is not the English practice at all. We do it in this country for cheapness sake, and fill the well promptly as soon as the cylinder is set.

Objection by counsel for complainant to the last part of this answer as incompetent and irresponsive, the question being specially confined to what was the fact of the casing in this instance.

X Q. 39. Will you please show me the place where you say the leaves of your book have been torn out?

A. I haven't that book with me.

X Q. 40. Will you please produce it?

A. Yes, sir.

X Q. 41. Have you in this office at this time or at your foundry any books or memoranda which will show definitely at what date that casing was made?

A. I believe I answered this question, practically, in a former answer, naming what books were missing and the cause thereof, as near as I can tell.

X Q. 42. Please answer it again, categorically.

A. I have no books here and have no books at the foundry that I know or suspect to contain any fact bearing on this point than I have heretofore spoken about.

X Q. 43. Have you any books or memoranda which will
234 show more definitely any of the items which you have already made reference to—what part of the hydraulic hoister it was upon which labor was performed and time credited, as you have just stated?

A. I can produce our order book showing that no other orders for hydraulic elevators were received within the limit of the dates mentioned in this time book, for which work was credited to hydraulic hoister. These time books are the original records kept by the foreman.

X Q. 44. What system of counter-balances was used in the Bare, Shinkle & Howell hoister?

A. Was used? The first attempt to counter-balance this machine, or, at least, that which I remember to have been first, was the placing of cast-iron weights at intervals on a wrought-iron rope, and I think it is the only counter-balance that was ever put on the said machine, and I believe that the machine was finally accepted as satisfactory without any counter-balances.

X Q. 45. During the term of Col. Locke's employment with the company did you ever know an instance where he produced or the company used the system of counter-balances which you say he had presented as an original feature to you in your conversations with him prior to his engagement?

A. I do not believe that system was ever adopted. Sketches were made therefor, but my recollection was that the trouble in sweeping up the cast-iron fusee drum caused its abandonment. There are sketches in book No. 7½ showing the methods of construction of a sweep for making a mold for said fusee.

X Q. 46. From whom did you obtain your method of counter-balancing that was employed by your concern?

Objected to by counsel for respondent as irrelevant.

A. I believe Col. Locke suggested the use of heavy link chains, such as are in general use now.

235 Redirect examination by Mr. HOSEA:

Q. 1. As a matter of fact, what was the principal work in relation

to hydraulic elevators which first occupied Mr. Locke's time upon his engagement in November, 1871?

Question objected to by counsel for complainant as not being proper re-examination.

A. This is in the memorandum book. The first three or four pages are largely occupied with calculations concerning hydraulic elevators. The first entry is the date for a calculation regarding the friction of a valve, but the succeeding pages refer to counterbalance weights, foundations for pit of an elevator, and calculations for chain. These entries, however, probably do not represent all he did, as, in the nature of our drawing-room work, it is with great difficulty a man can confine himself to one thing for any great length of time.

Counsel for complainant objects to all statements as to contents of the book, as the book is in evidence and speaks for itself.

Q. 2. As a matter of fact, in the history of the development of the elevator in 1872, was the disk valve abandoned, and did all consideration or discussion of it cease when the first idea of the present piston valve was adopted?

Question objected to by counsel for complainant because it relates to matters not at all involved in this alleged surrebutting testimony, but, if competent at all, relates wholly to the original matters of defense; and, next, because the question is leading and highly suggestive.

A. It was about June, 1872, that I fix as the date of the total abandonment of the disk valve, and the same date is approximately the commencement of the use of the piston valve.

236 Counsel for complainant objects to the answer, in addition to the foregoing reasons, as being simply conjecture.

Q. 3. Then, please state upon what circumstances you base your previous answer.

The objection made by counsel for complainant to the former question is repeated as to this, and notice is hereby given that all of this matter will be moved to be expunged from the record.

A. I base my statement on my knowledge that machines built for the gas company in the spring of 1872 had these disk valves, and that in the summer of the same year contracts were entered into with two Pearl-street houses for elevators, and the satisfactory valve, or a satisfactory valve, was supposed to have been found at that time.

Q. 4. Referring to the piston valve sketched in Exhibit No. 14, please state what the same has reference to.

Same objection by counsel for complainant is repeated as to this question.

A. I recognize that sketch as the draftsman's sized sketch pre-

liminary to making a working drawing of a small-sized valve for use on the dumb waiters constructed at the public library.

Q. 5. Can you fix the date of the public-library job?

Question objected to by counsel for complainant on the same ground.

A. Without the record, I cannot speak accurately, but I feel sure it was during the year 1873. Our books will show that, however.

Q. 6. You were asked in cross-examination whether you had written to Mr. Bauer about the matter of the Rankine book. Please state why you so wrote to him.

Objected to by counsel for complainant as incompetent and immaterial.

237 A. My impression always has been that a book of Rankine's, on the margin of the page on which the valve is described, bears a remark in pencil, in Mr. Lane's handwriting, the words, "This is the valve," and I made inquiry of Mr. Bauer with the idea that possibly his book had been left, and that was the book in which the remark had been written.

This answer is objected to by counsel for complainant, in addition to the former objection, as being clearly incompetent.

Q. 7. You say a book of Rankine's. Please specify more particularly what book you have reference to.

Same objection by counsel for complainant to this question.

A. Rankine published several books—one on steam-engines, millwork—and it is possible that these devices are represented in more than one of his works. I cannot more definitely indicate the book than that. It was a publication of Rankine with reference to machinery.

Same objection to this answer entered by counsel for complainant.

Q. 8. What was the picture or cut upon the page to which you refer?

Question objected to by counsel for complainant on the same ground.

A. The cut was that of a water engine, with one or two valves attached—a very similar construction in principle to the piston valve covered by Locke's patent.

Q. 9. Was this book to which you refer, at the time when you saw this note on one of its pages, in the drawing-room of the Lane & Bodley Company?

Question objected to by counsel for complainant on the same ground.

238 A. Yes, sir.

Q. 10. When?

Same objection entered by counsel for complainant.

A. I cannot now fix the date, but I believe it was within Mr. Bauer's second engagement.

Same objection to this answer by counsel for complainant.

Q 11. Did you recognize it as the same book to which you referred yesterday as having been there during his first engagement?

Question objected to by counsel for complainant on the same ground.

A. No, sir; I made no recognition of that fact.

Q. 12. You spoke yesterday of the padlock device as appearing on other drawings made by Mr. Locke for the company than those of the valve in controversy. State generally to what extent that device was so used by him on drawings made for the company.

Objected to on the same ground by counsel for the complainant.

A. I believe he used it regularly on all drawings made by him. It may have been occasionally omitted.

Q. 13. You were interrogated on cross-examination concerning the casing for the well of the Bare, Shinkle & Howell elevator. Assuming that the construction of the casing was not begun until after the order for the elevator was received, about what length of time, in the ordinary practice of your company, would be required for the construction and delivery of the casing after the order was received.

This question is objected to by counsel for complainant, first, because the custom of their company is not competent testimony; second, because this was the first casing that they had ever made for such a purpose, and therefore there was no custom as a predicate for that; third, unless the witness has positive knowledge of the fact in this particular instance he cannot apply a subsequent custom to a former act.

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A. Our facilities are better now than they were then, and two sections of cylinder, six feet long each, are all we expect to get from the foundry in a week. Because of the tardiness with which these castings come out, it is now largely our custom to buy them from the Newport pipe foundry. These sections are about six feet long each.

This answer is objected to by counsel for complainant for the foregoing reasons.

The WITNESS: I use the term "casing" as meaning the sections of cylinder. The question is asked in the terms of the original question "casing" of the well. This well was cased in the usual way, with a wooden curb. This, technically, is the casing of a well, but

I understood both questions to refer to sections of the cylinder, and have so answered.

Q. 14. Assuming that the order for the Bare, Shinkle & Howell elevator was given on the 28th day of October, 1871, about what length of time intervened before your company delivered any material at the place or begun any work upon putting in the elevator?

Counsel for complainant enters the same objection to this question to the witness.

A. The first material was delivered in about five weeks after the date of the order, or about December 5th, 1871. The first work done there was commenced about this time.

Mr. LOGAN: Relying upon the foregoing objections, complainant's counsel declines any further examination of the witness, except as to the books asked for.

By agreement of counsel for both parties the further taking of these depositions was adjourned to this afternoon.

240 MAY 4TH, 1886—2.30 p. m.

In pursuance of the adjournment of this morning the further taking of these depositions was then resumed.

Cross-examination of CHARLES F. THOMPSON continued:

The witness produces the book called for by Mr. Logan, counsel for complainant, this morning. Counsel for complainant offers the book in evidence, Exhibit 19, and says he does not desire to ask the witness any questions regarding it.

Mr. Hosea, counsel for respondent, objects to the book being offered in evidence, and proceeds to re-examine the witness.

(By Mr. HOSEA:)

Q. 1. Please state, Mr. Thompson, what this book is and describe its condition with reference to the omission of any portion, and state the cause of such omission, if you know.

Question objected to by counsel for complainant, to so much thereof as relates to the omission of parts of the book, as the book speaks for itself.

A. This book is the time book of the workmen in the pattern shop from September 1st, 1871, until January 29th, 1874, inclusive. The book is in a somewhat damaged condition, some one or two quires being missing in the fore part of the book. I attribute its condition to the period of its use, having been in use and handled every day for several years. The present condition of the book is exactly the same as when found on the storage shelves, where it has been for several years.

Q. 2. What entries, if any, appear upon the remaining portion of the book relating to the Bare, Shinkle & Howell elevator mechanism?

Question objected to by counsel for complainant, as the entries speak for themselves.

241 A. I find entries on December 18th and 19th, 1871, of labor performed on patterns for hydraulic hoister valves. These patterns were for valves for the Bare, Shinkle & Howell machine. There is later in this book, on January the 13th, 15th, and 16th, also additional labor on hoister-valve patterns.

(By Mr. LOGAN:)

Q. 3. You say you have no knowledge of the missing leaves during the month of October?

A. None whatever. I mark this Exhibit No. 19.

CHARLES F. THOMPSON.

AFTERNOON, *May 4th*, 1886.

Col. P. P. LANE, a witness called for the respondent, being first duly sworn, deposes and says as follows:

Direct examination by Mr. HOSEA:

Q. 1. You are the same P. P. Lane who has heretofore testified in this case, are you not?

A. I am.

Q. 2. Col. Locke has testified that prior to his employment by your firm, in November, 1871, the elevator of Bare, Shinkle & Howell's was in process of construction, and that he made several visits to the place at such time with you, and at other times met you there by appointment during that period and discussed the general subject of elevators, and that he then and there called your attention to the special importance of the valve or regulator for such structures. Please give your recollection as to the fact of such interviews, if such were had, and the nature of them.

A. I had no interview with Col. Locke at Bare, Shinkle & Howell's. There was no part of an elevator at Bare, Shinkle & Howell's during the preliminary conversation of his engagement.

Q. 3. How far had the construction of the Bare, Shinkle
242 & Howell elevator progressed at the time of Col. Locke's employment, in 1871, if you remember the facts?

A. I have lost the date at which he was employed.

Q. 4. November, 1871.

A. I know the month. I had it in my testimony before. I should presume that the patterns were being made and perhaps a few of the castings, but no work had been finished at that time.

Q. 5. About how long prior to his actual engagement did he first apply to you for the position?

A. It was not a very long time. I could not recollect the first interview I had with him in regard to his employment. It might have been four, five, or six weeks, to the best of my recollection.

Q. 6. Col. Locke states that during one of these visits—that is, the visits with you to the Bare, Shinkle & Howell elevator—he, Col. Locke, stated to you that in his judgment the merit and value, commercially, of hydraulic hoisters would rest in the perfection of the valve or regulator, and that he laid down, in his judgment, what were the requisite qualities of such a regulator. Have you any recollection of such a conversation taking place there or elsewhere prior to his engagement by you?

A. I have no recollection of any conversation in regard to any specific device for hydraulic elevators taking place previous to his engagement, and as for having an interview with him at Bare, Shinkle & Howell's, in discussing these elevators there, it was impossible, for there was no elevator there to be discussed.

Q. 7. Col. Locke states that prior to the adoption of the present form of piston valve he informed you that he had invented a valve and had sketches of the same at home. What is the fact in that regard, according to your recollection?

A. I have no recollection whatever of his making any such statement to me.

Q. 8. Col Locke states in substance that after the firm had
243 tried several different forms of valves or regulators for hydraulic elevators, which had proved unsuccessful, that you requested him to bring from his home the sketches of a valve which he had, and that he did so in response to your request. What is the fact in that regard, according to your recollection?

A. I have no recollection of ever making any such request to Col. Locke or his ever bringing any sketch to the drafting-room of a valve. His sketches, as far as I remember, were all made in our own drawing-room.

Q. 9. Please examine the blotter, Exhibits Nos. 10, etc., here before you, and state in general what they are, and what the various sketches and calculations appearing upon the same are, in relation to the business of the firm.

A. I recognize these blotters as belonging to our drafting-room. The rule had been and has since been to use blotters to preserve all sketches, calculations, or anything that might be required to refer to in the future, in place of using scrap paper, which was liable to be lost, and these seem to have been the kind of blotters that Col. Locke used at that time, although we had at the same time regular bound books in the drafting-room for that purpose; that system was carried out through the entire shop and office, and is to the present day. The object is to preserve any record that they may contain, and not be liable to be lost as they would be upon loose sheets. These blotters very clearly relate to the preliminary work on hydraulic elevators, among other things. There seems to be sketches here of several kinds of valves which were made while we were considering the construction of hydraulic valves for use of the hydraulic elevator. There is one sketch of what might be termed a roller valve.

(By Mr. LOGAN:)

Q. 10. Please identify that in some way.

A. That is Exhibit No. 12, sketch B, and sketch A refers to a piston valve. There seems to be quite a number of sketches here of the roller valve as well as the piston valve. On page E is
244 another piston valve. On Exhibit No. 11 there are sketches of the disk valve. These sketches were evidently all made in our own drawing-room, and by Col Locke whilst in our employ.

Q. 11. Referring now to Exhibit No. 12, to sketch marked A, state, if you please, what that sketch represents in detail.

A. That sketch represents in a rude way a piston valve, which is evidently designed to be used for a hydraulic elevator. In one of the openings here I see is marked "plunger." It means, without doubt, "to the plunger." Another of the openings is marked "supply;" another opening is marked "discharge." So that the object of the sketch is evidently for a valve for a hydraulic elevator such as we were then discussing and commenced to build.

Q. 12. How does the device shown in the said sketch compare with the device shown upon Exhibit No. 4, dated June 6th, 1872?

A. The sketch A in Exhibit No. 12 constitutes all of the essential features of the more complete drawing of Exhibit No. 4. It has the balanced piston; it has the three functions of the inlet, the means of standing at rest, and of discharge. Both the complete drawing and the sketch combine all of those essential features that are required of a valve for that purpose.

Q. 13. Please state whether there appears upon sketch A any adjunct to said valve which does not appear upon the complete drawing of Exhibit No. 4.

A. There is a projection to the valve rod in the rude sketch of Exhibit No. 12. That is not necessary for the action of the valve for a hydraulic elevator, and seems to have been copied from a drawing found in Rankine's book on mechanics.

(The witness is handed a book.) The rude sketch and the cut in Rankine's book, page 140, are very similar, and the projection placed on the lower end of the valve rod seems to have been
245 put there, because it was in the cut found in Rankine's book, which, on more mature consideration, was left off in the completed drawing, Exhibit No. 4.

Q. 14. At the time of the discussion of these valves, after Locke's employment by your company, what knowledge had you of the form of valve shown in Rankine's book, pages 140 and 141, and what reference, if any, was made to the valve there shown?

Objected to by counsel for complainant as being wholly in chief.

A. At the time we were discussing different forms of valves and had different sketches on our table in the drafting-room. We had a cut of Rankine's valve on the table at the time, and the knowledge of the existence of that form of valve was known to Col. Locke and to myself and to others about the establishment. The disk valve was adopted in preference to any other form that had been sug-

gested at that time. I would say in preference to other forms on account of its simplicity, and the action of the valve was entirely satisfactory in every respect, both in the graduation and the ease of its working, excepting the wear of the disk by the use of the extreme muddy water of the Ohio river.

Q. 15. Col. Locke testifies in respect to the copy of the Rankine book in evidence that it was purchased by him for the firm, at his own suggestion, in November, 1872. What are the facts in that regard, according to your recollection?

A. His statement, so far as I know, is correct in regard to the purchase of the book.

Q. 16. Have you any recollection of the circumstances under which Col. Locke purchased this book?

A. I cannot say that I have any particular recollection about it. It was a very common book, to be found in all our libraries. It was in our drawing-room, but it seems it was owned by Mr.
246 Bauer, which he afterwards took away. The copy which he had in our drawing-room belonged to Mr. Bauer. Whether he got it from some one or from the public libraries, or whether we had a copy and it was lost, I cannot tell you, but the fact of having a copy of the Rankine valve for our examination at that time is a fact clearly recollected by me.

Q. 17. In the opening of your former testimony you stated that at the time of your first acquaintance with Col. Locke you were just commencing the building of hydraulic elevators and had built two, one for Gould & Pierce and one for Shinkle & Kries. Do you wish to modify that statement at that time?

A. I wish to state that the facts of my former testimony are all true, excepting that I had misplaced the dates somewhat; and, in view of the very remarkable testimony of Col. Locke, it made it necessary for me to go back and examine those dates with more care, and in place of *their* being two elevators, as stated in my former testimony, there should have been but one stated, and that was one that we simply made the iron-work of for Henry Pierce, and did not erect it, Mr. Pierce furnishing his own valves, his own platform and uprights, and we simply doing the iron-work for him. The conversation- in regard to the valves should have been put at a much later date than what I stated them in my former testimony, these various conversations occurring several months after Col. Locke's employment. The conversations with Col. Locke in regard to elevators before his employment was entirely general. Nothing was said about any particular special device that was at all vital to the successful working of hydraulic elevators. Among the early devices which Col. Locke proposed was a counter-balance, which he claimed was necessary for the successful working of hydraulic elevators, and some device of that kind is now in use. The device which he proposed was found to be entirely impracticable, and the only one that we made was soon taken off at the demand of the owner of the machine.

247 Counsel for complainant objects to all statements regarding the counter-balances.

Q. 18. Col. Locke states, in substance, that at the time of his employment you were using a Ludlow or gate valve; that you then adopted the disk valve, and, these being unsuccessful, he made suggestions of other forms of valves, among them a piston valve of which he presents a sketch; also the double piston or bonnet valve shown in Exhibit No. 2; and that the unsatisfactory results of all the valves or regulators which had been used up to that time were admitted by you, and that you then expressed a desire to try a plan of valves which he had several times mentioned he had designed and had sketches at home, and at your request he brought the sketches to the drawing-room of Lane & Bodley; and that while the drawings were being made from these sketches you objected to the serrated graduating device as now employed, stating that, in your judgment, they would be an infringement upon the Judson governor patent, and that under your direction he removed the serrated graduating device. Is this statement of Col. Locke's true?

A. My recollection is very clear that the serrated device was removed by his advice, and he proposed to trust to the conical shape of the piston for the graduating of the valve.

Q. 19. He says: "Whilst the drawings were being made from these sketches"—that is, the sketches he brought from home at your request. Were any such sketches ever produced by Col. Locke?

A. No sketches were ever produced except what were made in our drafting-room, and no trace of any such sketches can be found among any of our records of that date, and nothing is in existence that we can find about our establishment that has any bearing or reference to any such sketch which Col. Locke speaks of. The sketches he has here were made in our own drawing-room, on our own blotters.

Q. 20. Did you ever know or have reason to suppose, or did he ever claim to you, that he had designed a valve at home prior to coming into your employ?

248 A. No; he never made any such claim. I never heard of any such claim until it was brought out in his testimony. No such claim was ever made to me or to any person connected with our establishment that I ever heard of.

Q. 21. Did you in any of your conversations with him at any time refer to the Judson governor patent; and, if so, what patent have you reference to?

A. I have no recollection of ever bringing up the Judson governor patent in regard to *their* being any objection to our using any kind of graduation on this piston valve, and if there had been any discussion of that kind it could have had but little or no force, as I think the Judson patent had either expired or was very near expiration.

Q. 22. Col. Locke states that during the latter part of his employment he made a model and drawings with reference to his application for letters patent upon the valve in controversy in the drawing-

rooms and shops of the Lane & Bodley Company. What is the fact in that regard?

A. I have no knowledge of his making any drawings or making any models of the hydraulic valve or anything else while in our employ other than for Lane & Bodley. It has been the standing rule in our shop for many years that no employee shall use any part of the establishment for his own individual use without the consent of the foreman or proprietor of the establishment; and if Col. Locke did use our drafting-room and work-shops for the purpose of making a model for his own individual use he transgressed the rule of the establishment, and had I ever seen him doing anything of the kind I should certainly have caused him to desist from any such work. We enforced the rule rigidly and have done for many years before he was employed in the concern of Lane & Bodley, and the rule is still in force.

Q. 23. Col. Locke states that in 1875, prior to going West, and when he had called at your office to pay his respects to you,
249 that you broached the subject of his pending patents, and asked him what royalty he intended to charge; that he told you that he proposed to charge twenty-five ($25) dollars per valve, and that you replied in substance that that was satisfactory if he procured a good patent. What is the fact with respect to this or any other similar conversation?

A. Col. Locke never let me know that he was about to take out a patent. He had never informed me that he had got a patent, and he never made any demands for royalty, and the only knowledge that I have had was when it was issued from the Patent Office.

Q. 24. Col. Locke states that in the year 1876 he followed you to Philadelphia, where he met you and opened the subject of his patent and his claims upon you in that regard, and that you evaded the subject upon the plea of being in Philadelphia upon a social visit with your family, and for that reason declined to discuss the subject. What is the fact in regard to that or any similar conversation had with you?

A. What Col. Locke may mean by following me to Philadelphia I do not know. Whether he went before I did or after I do not know. There was certainly no necessity to go to Philadelphia to have any conversation with him on any business subject. In regard to my going to Philadelphia on a pleasure trip he was entirely mistakan, as I went there especially on a business trip. Business was my object. I remember seeing Col. Locke in Philadelphia, and the recollection is quite clear that he stayed at a little hotel out near the exposition grounds that I was stopping at and that he was there only one night, and my recollection was equally clear that no conversation was had with regard to the valve or any business matter between myself and Col. Locke.

Q. 26. Please state the time and circumstances of the first intimation you received from Col. Locke of his claim upon you or your company for the valve in controversy under his patent.

250 Question objected to by counsel for complainant for reasons heretofore given.

A. As I have before stated in my testimony, *that* the first demand, and the only demand ever made, was a verbal one in the Lane & Bodley Co. office a short time before the commencement of this suit, and that demand was only verbal; it was simply inquiring what I was going to do about his valve.

Q. 26. During the period from 1874, when Col. Locke left your immediate employ, up to 1884, when this inquiry or demand was made, and during which period, as you have stated, no notice or demand in writing was made upon you or your company by Col. Locke in relation to his valve, what knowledge had Col. Locke of the fact that you were building the valve in controversy?

Question objected to by the counsel for complainant for the same reasons.

A. He must have known that we were building the valve, making the valve continuously, as he was often in our establishment during that time. His visits to our concern would average more than once a year, perhaps twice. I know that he often stopped at the Grand hotel, where our hydraulic elevator was in use—the Grand hotel of this city. I have heard him say that he boarded at a hotel in Salt Lake City which was using one of our elevators. We sold one to the Mormon, or Zion, Co-operative Mercantile Institution (I believe that was the name); they were using one or more of the machines. Several machines had been sent to the mining regions in which he was at that time familiar. He sold one of the elevators for us himself in the meantime, and there could hardly have been a month at any time during the whole he might not have seen the construction of these valves going on in the shop.

Q. 27. Col. Locke states as a reason for not making demand upon you during the period from 1875 to 1884 that he did not
251 regard it as either right or prudent to have other than amicable relations with you so long as you had not actually refused to comply with the agreement of 1875, and that he did not write to you so as to bring up the issue, as he had no time or means at hand to enforce his right in case of your refusal to comply with your agreement. Was there anything in your relations with Col. Locke at any time which would have justified him in assuming that you were not willing to meet him fairly in the discussion of any proper and just claim which he had upon you without impairing your friendly relations?

Counsel for complainant objects to the foregoing question, in addition to the former objections, as being leading, suggestive, and hypothetical.

A. I did not know that Col. Locke had ever discovered anything in the business manner of the Lane & Bodley Company in treating any subject that might come up where they were interested which would have led him to have supposed that we would not treat any claim he had on our house fairly. Our theory of the matter was that we considered that Locke looked upon the matter the same as we did; that he had no claims on the Lane & Bodley Company for the

valve, as the experimenting and the drawings and the construction and all the expenses attending it were borne by the Lane & Bodley Company, and we had no idea that he made any claim to have any right individually to the valve. We had a very kindly feeling towards Locke and we thought that if he could get any money out of any other manufacturer we would not object, but we had not a distant idea that we would be called upon to in any way compensate him for the use of the device, and the absence of any demand for all these years by Locke on the Lane & Bodley Company for the use of what he claimed to be his patent and the total silence on both sides seemed to indicate that we both entertained the same ideas. We knew that Locke had never acquired a large amount of money from his employment in which he had been engaged
252 and we would make no objections to anything he would get from outside parties.

This answer is objected to by counsel for complainant as palpably incompetent, besides the former objections.

Q. 28. Was any notice taken of his obtaining his patent in the form of a communication of any kind from you to him or from him to you or did you make any objection thereto; and, if not, why?

Question objected to by counsel for complainant for the same reasons.

A. We made no objections and received no notice from Col. Locke that any compensation would be demanded for the use of the valve for the reasons heretofore stated.

P. P. LANE.

Mr. Logan, counsel for complainant, does not desire to cross-examine the witness.

Certificate.

STATE OF OHIO, }
Hamilton County, } *ss:*

I, Otto Pfleger, a notary public within and for the county of Hamilton and State of Ohio, being duly commissioned and qualified, do hereby certify that the above-named witnesses, Charles F. Thompson and P. P. Lane, were by me severally sworn to testify the truth, the whole truth, and nothing but the truth, and that the depositions by them subscribed, as above set forth, were reduced to writing in shorthand by me; that the same were thereafter transcribed by me as the same appears above; that the same were then read over to the witnessors by the witnesses; that the same were subscribed
253 by the said witnesses respectively in my presence; that the same were continued from day to day, as the law requires and as above set forth; that said depositions were taken at the time and place specified herein by agreement of counsel for both parties, notice thereof and the service of the same having been waived by consent.

I do further certify that I am not counsel, attorney, or relative of either party or otherwise interested in the event of this suit.

In testimony whereof I have hereunto set my hand and affixed my official seal this 6th day of May, A. D. 1886.

OTTO PFLEGER,
Notary Public, Hamilton Co., O.

Cost Bill.

The cost for taking the deposition, including swearing, certifying and transcribing, were paid May 16, 1886, by defendant, The Lane & Bodley Company, amounting to $23.00.

OTTO PFLEGER,
Notary Public.

254 And afterwards, to wit, on the 18th day of May, A. D. 1887, the following agreement was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Agreement.

United States Circuit Court, S. D. O.

JOSEPH M. LOCKE
vs.
THE LANE AND BODLEY COMPANY. } In Equity. No. 3708.

By consent of parties it is agreed that the above-entitled cause be set for final hearing at any date after May 30th convenient to the court.

THOS. A. LOGAN,
For Compl't.
L. M. HOSEA,
For Resp'd't.

Cincinnati, May 5, 1887.

254½ Exhibits filed Nov. 2, 1887.

255 And afterwards, to wit, on the 29th day of May, A. D. 1888, the following opinion of Judge Sage was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

U. S. Circuit Court, S. D. O.

JOSEPH M. LOCKE
vs.
THE LANE AND BODLEY CO. }

The complainant sues for infringement of his patent, No. 173,653, dated February 15, 1876, application filed May 27, 1874, for improvement in three-way-balanced stop-valves.

The invention, which is styled "A new and useful cock for hydraulic elevators," is primarily designed, as is stated in the speci-

fications, "as a means of so controlling the supply and discharge of the water used for impelling hydraulic lifts or elevators as to enable their upward or downward motion or stoppage at any desired level without such nice attention or manipulation as would be difficult or impossible to an ordinary operator and without such sudden arrest or resumption of the flow as would endanger the walls of the conducts."

The supply and discharge chamber P has on one side of it a service pipe or passage, C, affording permanent communication with the hydraulic motor or other engine to be impelled. It communicates at opposite ends with two co-axial pipes, Q and L. The pipe Q receives the inlet passage A and has a tubular prolongation, J, which enters the chamber P and has one or more scallops
256 or indentations at its edge, which, narrowing inwardly, as at J, constitute graduated openings. The pipe Q has two cup packings, the inner one, R, at the junction of the prolongation J with the lower end of the pipe Q constituting the seat of the inlet valve. The other packing, R′, occupies the outermost extremity of the pipe Q and incloses the balancing piston. The inner end of the balancing piston is, by means of a rod, connected to a convex valve, F, which is the inlet valve proper and is prolonged downward, so as to form a cylinder, M. F and M enter and play within R, which therefore serves as the inlet valve seat. M is near its lower end encircled by a packing and discharge valve of India rubber, leather, or some yielding and impervious material, of such such dimensions as to be capable of filling the discharge pipe L, the interior diameter of which is slightly greater than that of the cylinder M, and is also the interior diameter of the prolongation J. The cylinder M is prolonged below the packing valve S, and has one or more notches, *h*, similar in form and function to the notches (or indentations) J of the tubular prolongation J. The distance between the valves F and S, or — in others covers the length of the cylinder M, so much exceeds that of the chamber P as to secure a sensible or sustained duration, respectively, of the receiving the closed and the discharging conditions of the apparatus, thereby rendering unnecessary such exact movement of the operating rod as would be neces-
257 sary if the interval between the supply and the discharge were only momentary or of slight duration. All the prolongations are in the direction of the flow, and the packings R and S are so arranged and secured relatively to the notches J and *h* as not to come in contact with them and be torn or mutilated.

When the apparatus is closed, if it be desired to elevate the platform, the operating rod is depressed until the convex valve F, passing into the indented prolongation J, admits water to the engine, slowly at first, but in constantly increasing quantity, until fully spent, occupation of the discharge pipe L by the packing valve meantime preventing any escape of water from the engine. The platform is brought to rest by reversing the rod, and lowered by elevating it.

The specification sets forth that no claim is made to graduated valve openings, broadly, nor to any specific form thereof, apart from

the described special combination with soft or yielding packing without contact.

The claims are as follows:

1. The chamber P, having on opposite sides of a permanent service passage, C, two other passages, Q and L, having a common axis and terminating at said chamber, in seats R and E, for supply and discharge valves F and S, whose distance apart is greater than that of said seats, said supply valve and discharge seat being pro-
258 longed in direction of the flow, so as to permit independent control of the supply and discharge and their separation by a period of complete closure, substantially as and for the objects designated.

2. The tubular projection J, cylinder M, having graduations *j* and *h*, packing R, and packing valves S, arranged to operate without attrition from each other, substantially as specified.

3. In combination with the duplex-valve plunger and the three-way passage, substantially as described, I claim the balancing piston N, adapted to operate as set forth.

The defendant contends:

1. That the complainant's patent is invalidated by the description contained in Rankine's Manual of the Steam-engine and Other Prime Movers, 5th edition, London, 1870, beginning on page 140, of a mine-pumping engine designed by M. Junker. Reference is also made to page 128 of the same volume for description of cup packing. In the mine engine the piston valve is shown in the drawing, and described as notched at the edges in order that the opening and closing of the port may take place by degrees, the water flowing partially through the notches for a short time before and after the piston arrives at the edge of the ports. Conceding that we have here what would anticipate a claim for the graduated valve open-
ings shown in the drawings and described in the specification
259 of complainant's patent, we have only to recall that the complainant expressly disclaimed graduated valve openings, either broadly or of any specific form, excepting in combination, as has already been stated, nor does he claim the cup packing, excepting in combination. Upon full consideration the court does not find any description in Rankin's anticipating complainant's patented improvement.

The patents to Dunlap, Oct. 29, 1872, No. 132,526, for improvement in balanced valves, and to Vaughn, Sept. 30, 1873, No. 143,266, for improvement in balanced valves for hydraulic cranes, relied upon by defendant, do not anticipate the complainant's improvement.

2. The defendant's second contention is that the complainant's improvement does not display invention; that if anything more than an aggregation of old elements, it was only the product of skill, or, as counsel expressed it, the natural outgrowth of experience with local conditions embodying mere mechanical modifications of existing and well-known appliances.

The court does not concur in this view. The parts of the combination claimed were old, but the combination was new and it produced a new and useful result. The problem was to produce a valve which would obviate the "water ram" and relieve against the excessive wear from muddy water. The complainant was, when the improvement covered by the patent, in suit was perfected in the employment, as general designer and draughtsman, of Lane
260 and Bodley, a partnership engaged at the city of Cincinnati, in the construction and sale of hydraulic elevators and other machinery. The water ram could be prevented by the use of various devices, as by the use of graduated openings not differing substantially from that described by Rankine in the work already referred to, or by a disk valve described in the testimony. The great difficulty was to overcome the wear and tear of the packing by the gritty particles in the water whenever it became muddy by reason of a rise in the Ohio river, the source of the city's supply. After many trials and failures the construction patented to complainant was hit upon, and it, and it alone, was satisfactory, and it was satisfactory because of a new, and therefore unknown, combination, which was an invention.

The evidence does not sustain the claim that the invention was not the sole production of the complainant, but the joint production of himself and P. P. Lane, senior member of the firm of Lane and Bodley. The burden of proof is upon the defendant. Lane testifies that the notches—referred to in the specification also as "scallops or indentations"—at the edge of the tubular prolongation J were determined upon by his direction; that the indication of the change was made upon the drawing (Exhibit 6) by his instruction, and that he thinks, but is not positive, that he made the marks upon the drawings showing the change to be made. Locke denies all these statements and testifies that he devised his improvement be-
261 fore the time of his engagement as draughtsman with Lane & Bodley. Without entering upon the details of the testimony, it is sufficient to say that the court finds the fact to be that the invention was made by the complainant.

Having found that the improvement displays invention and that it was made by the complainant, the next question is whether the defendant has established that it has either an indefeasable license or shop right or an equitable part ownership of the title. This defense is made principally upon the amended answer, filed Feb'y 2, 1886, the original answer having been filed June 24, 1885. The original answer sets up that the improvement was made by complainant while in the employ of Lane and Bodley under full salary and under obligation to give to that firm his time and skill in designing, perfecting, and embodying in working drawings construction and improvements in machinery, &c., in the line of their manufactures, and that it was carried into public use by them with the full knowledge of complainant and without his objection or claim that it was patentable. The amended answer sets up that it was understood and agreed, as part of his contract of employment, that during its con-

tinuance any and all improvements made by complainant and deemed by said firm patentable should be assigned to said firm and complainant jointly, and that said firm should have the right or option of the exclusive title and ownership of such patents as might be taken upon such inventions at a price to be agreed
262 upon or fixed by arbitration, and that complainant acquiesced in the use of said improvement without claiming that it was patentable or that they were not entitled to its free use; also that complainant while in their employment took no steps toward securing letters patent therefor, nor for some time afterwards, and that his application was — filed until more than three months had elapsed after said employment had terminated.

The complainant's application for a patent was within two years after his improvement was perfected. The evidence does not establish that he abandoned his invention. The agreement and understanding averred in the amended answer is not made out by the evidence. Lane himself, as a witness, admits that there was no such agreement. It is sought to reach the same result by evidence tending to prove a custom by virtue whereof draughtsmen and designers recognize the right of their employers to the products of their invention; but nothing of the sort is pleaded, and if it had been it is not proven. Moreover, admitting the agreement to have been made, or the custom to have been proven, what has either to do with this suit?

The firm of Lane and Bodley was dissolved in 1876 by the death of two of its members. The survivors organized the defendant corporation and this suit is against that corporation, which is
263 entitled to none of the rights claimed of Lane and Bodley. The fact which appears in the record that the surviving members of the firm of Lane and Bodley at the date of the incorporation of the defendant company held all the shares of its stock, excepting thirty reserved for sale to its employees, did not indentify the corporation with the firm, nor did the assignment by the surviving partners of all the property and assets of the firm to the corporation operate to confer upon the corporation any right to use the complainant's improvement; but it is said that the complainant's suit must fail and the complainant be remitted to whatever rights he may have at law by reason of his laches in pursuing his equitable remedy and the estoppel by conduct constituting a waiver of equitable rights. These propositions are based upon evidence tending to prove that, although complainant knew that the defendant was making, using, and selling his improvement, he made no objection, set up no claim, made no demand for royalties, but was silent and acquiesced until 1884. It is not necessary to consider the evidence, which is conflicting, in reference to the complainant's silence and acquiescence. In any light in which it may be viewed, it is insufficient. Upon this whole case when the patent and the complainant's title to it are sustained, Hapgood *v.* Hewitt, 119 U. S., 226, disposes of all the other defences. There is nothing in them.

The decree will be for an injunction and account with costs.

264 And afterwards, to wit, on the 15th day of June, A. D. 1888, an entry was made upon the journal of said court, clothed in the words and figures following, to wit:

Journal Y, p. 22.

This cause came on to be heard upon the bill of complainant herein, the answer thereto of the defendants, The Lane and Bodley Co., the replication of the complainant to such answer, and the proof, oral, documentary, and written, taken and filed in said cause; was argued by counsel for the respective parties, and was submitted to the court.

Now, therefore, on consideration thereof, it is by the court ordered, adjudged, and decreed as follows, viz:

That the letters patent No. 173,653, granted and issued on the 15th day of February, 1876, to Joseph M. Locke, being the letters patent referred to in the bill of complaint herein, are good and valid in law.

That the said Joseph M. Locke was the first and original inventor and discoverer of the three-way-balanced stop-valves as described and claimed in the said letters patent and the specification annexed thereto, and is the exclusive owner of said patent.

That the said The Lane and Bodley Co., defendants herein, have infringed upon the said letters patent and upon the exclusive rights of the complainant under the same—that is to say, by making and selling one or more of the said three-way-balanced stop-valves, as charged in said bill of complaint.

And it is further ordered, adjudged, and decreed that the
265 complainant do recover of the defendants the profits, gains, and advantages which the defendants have received or made or which have arisen or accrued to them from the said infringement of the said patent by the manufacture, use, or sale of the aforesaid three-way-balanced stop-valves, as described and secured by the said letters patent No. 173,656, since the 15th day of February, 1876.

And it is further ordered, adjudged, and decreed that the said complainant do recover of the defendants his costs in this suit, to be taxed.

And it is further ordered, adjudged, and decreed that it be referred to B. R. Cowen, as a master (upon the suggestion of counsel), to ascertain and state and report to the court an account of the number of said three-way-balanced stop-valves made, and also the number sold by the said defendants, and also the gains, profits, and advantages which the said defendants have received or which have arisen or accrued to them since the 15th day of February, 1876, from infringeing the said exclusive rights of the said complainant by the manufacture, use, and sale of the said improvements patented in said letters patent.

And it is further ordered, adjudged, and decreed that the complainant on such accounting have the right to cause an examination of said defendants, *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of said defendants, and that the said defendants attend for such purpose before said master from time to time as said master shall direct.

And it is also further ordered, adjudged, and decreed that a
266 perpetual injunction be issued in this suit against the said defendants, restraining them, their clerks, servants, or other employees, and all claiming or holding under or through them, from making, selling (or using), or in any manner disposing or using any device or machine whatever embracing the invention or improvements described in the said letters patent, pursuant to the prayer of the said bill of complaint.

To all of which the defendant excepts and gives notice of appeal to the Supreme Court of the United States, and prays the court to fix the amount of the appeal bond.

And afterwards, to wit, on the 20th day of June, A. D. 1888, the following oath of master was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Oath of Master.

U. S. Circuit Court, S. D. O.

JAMES M. LOCKE
vs. } # 3708.
THE LANE AND BODLEY CO.

I, B. R. Cowen, having heretofore been appointed special master in the above entitled cause, do solemnly swear that I will faithfully perform my duties as such master, agreeable to the order of the court, to the best of my ability and understanding, so help me God.

B. R. COWEN.

Sworn to before me and signed in my presence this 20th day of June, A. D. 1888.

ROBT C. GEORGI,
Deputy Clerk U. S. C. C., S. D. O. [SEAL.]

267 And afterwards, to wit, on the 10th day of September, A. D. 1888, the following report of special master was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Report of Special Master B. R. Cowen.

The United States Circuit Court, Southern District of Ohio, Western Division.

J. M. LOCKE
vs. } # 3708.
THE LANE & BODLEY CO.

Report of B. R. Cowen, special master.

To the judges of the United States circuit court for the western division of the southern district of Ohio:

The undersigned, appointed special master in the above-stated

case under a decree entered therein June 15, 1888, respectfully submits the following report:

Said decree directs the master to "ascertain and state and report an account of the number of said three-way-balanced stop-valves made, and also the number sold by said defendant-, and also the gains, profits, and advantages which have arisen or accrued to them since the 15th day of Feb., 1876, from infringing the said rights of the said complainant by the manufacture and sale of said improvements patented in said letters patent."

268 The defendant company manufactured, during the time embraced in this inquiry, 221 of said valves, of all sizes, as follows:

1-inch valve	2
2 " "	14
3 " "	164
4 " "	36
5 " "	4
6 " "	1
Total	221

Of these, 211 have been sold and 10 are on hand. The statement of Mr. Thompson, the secretary and treasurer of the defendant company, hereto attached and marked "Exhibit A," shows a net profit accruing to defendant from the sale of said valves of $2,341.66. This amount is found after deducting from the selling price of the valves the cost of manufacture and the rateable proportion of the general expenses of the business of the defendant in each year.

It does not appear that the complainant engaged in the manufacture of his valves, or that any person or firm manufactured them by his permission, so that the question of lost sales or hurtful competition does not enter into the question of the measure of damages.

Nor is there any established royalty or license fee for the manufacture or sale of said valves, except in so far as such fee or royalty may be established or implied by a statement of complain-

269 ant that appears in the testimony in *in* the case when it was heard by your honors on the bill and answer. The testimony referred to is to the effect that April 10, 1875, in reply to a question by P. P. Lane, of the firm of Lane & Bodley, as to what royalty he (complainant) proposed charging them (Lane & Bodley) he (complainant) replied $25, to which Lane replied: "That would be satisfactory when I (complainant) got a good patent."

This conversation was with Col. P. P. Lane, senior member of the firm of Lane and Bodley, and general manager of the said firm. It does not appear that there was any agreement in writing as to that or any other royalty or license fee, nor does it appear that any money or other consideration was ever paid by Lane and Bodley or by the defendant company on that or any other royalty.

It is claimed, however, that the conversation referred to fixed the royalty, and that, inasmuch as the defendant company is the suc-

cessor of the firm of Lane & Bodley, or rather that the defendant company was incorporated with the partners in said firm as the principal, if not the only stockholders, and with Col. Lane, pres't, and continuing as general manager, and that defendant succeeded to all the property, contracts, and liabilities of the said firm; therefore the liability of said firm passed to defendant with the other liabilities, or if it did not so pass it was and is sufficient to fix the measure of damages.

This seems so purely a question of law, and therefore not
270 within the scope of the master's duty, that it is only referred to that it may be disposed of by your honors, if necessary. Should your decision be that a royalty is established by the facts stated, then the finding should be that defendant is indebted to complainant for 221 valves, at $25 each, amounting to $5,525.

Reference is again made to the statement of Mr. Thompson for the purpose of pointing out some items therein in which there seems to be a discrimination against the valve.

1. The valve is charged with that proportion of the general expenses of the defendant's business which the amount of the proceeds of the sales of valves each year bears to the whole volume of defendant's business in such year.

The general expense account includes unskilled labor, repairs, charity, insurance, rent, taxes, officers' salaries, oil, fuel, office force, drawing-room force, and the expense of promoting the business through travelling salesmen. The amount of that account varies during the time embraced in the account from 17 %, in 1880, which was the lowest ratio, to 37 %, in 1885, which was the highest.

Ordinarily such charges are proper, but in this case there were some peculiar conditions which may be sufficient to modify the rule; for instance, the valve was an improvement over anything previously used by defendant. At least defendant so advertised it in his circulars, claiming for it a material economy and other advantages in favor of the hydraulic power. The defendant used the valve to sell its elevators. The valve was therefore of greater value to the defendant than appears on the face of the statement,
271 because by the use of it in the elevators at a price of, say, $50, defendant was able to sell a machine of which the valve was an indispensible part for from $700 to $900—

That is to say, during the time the valve has been used by defendant said defendant made use of $11,050 worth of valves, and by such use was enabled to sell $165,750 worth of its other machinery manufactured. This indicates that there was a profit to the defendant in the use of the valves which is not apparent in the statement of Mr. Thompson.

2. During the period embraced in the accounts discounts from the regular elevator price-lists were made to the trade, varying from 10 % to 31 %, and deductions are made from the prices of the valves in the same proportion. This seems unfair, not only because labor enters into the prime cost of the valve in much larger proportion than it does into the prime cost of the other parts of the elevator, and there is but very little variation in the price of skilled labor from

year to year, but also because there is a much smaller proportion of raw material in the valve in proportion to price than in the rest of the machine, and the material variation in cost accrues from the fluctuating values of the raw material. To scale the selling price of the valve, therefore, at the same rate as the heavier and relatively less expensive parts is a manifest inequality.

272 It is impossible, however, with the data attainable, to place an accurate money value upon these inequalities in any estimate of damages, but there is another discrimination that may aid in arriving at a more satisfactory result. It is shown in Mr. Thompson's statement that valves sold in connection with the completed elevators were invariably sold at a lower price than those sold separately—that is to say, defendant sold valves to itself to use in elevators at a less price than they sold them to other parties for the same uses. The valve is only used in connection with elevators and is adapted to no other use. This is a discrimination against the valve and in favor of the defendant's elevator, which elevator is useless without the valve. Defendant can afford to pay and ought to pay as much for valves as it charged others for the same.

It is therefore the finding of the master that the measure of damages to the complainant by the defendant in the manufacture and sale of said valves is the average price at which such valves were sold separately from the complete elevators, less the prime cost of manufacture, and also less a *pro rata* share of the general expenses of the defendant's entire business. The following table is based upon this finding, the deductions being the prime cost and the proper share of the general expenses as they are shown in the statement of Mr. Thompson:

273 The following table shows the average selling price of separate valves, the prime cost, expenses, and discounts for the respective years and the net profit on the valves of each size, from 1 to 6 inches:

Year.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.
1876	25 20	41 20	48 37			
	17 78	26 54	37 64			
	7 42	14 66	10 73			
1877	27 20	39 14	48 37	48 37	59 20	
	22 10	22 53	33 04	35 13		
	5 10	16 61	16 33	24 07		
1878			48 37	59 20	63 20	
			31 05	34 06	50 67	
			17 32	25 14	12 53	
1879		39 14	48 40	59 20		
		22 00	31 30	34 33		
		17 14	17 10	24 87		

Year.	1 in.	2 in.	3 in.	4 in.	5 in.	6 in.
1880		39 14	45 20			
		20 27	28 84			
		18 87	16 36			
1881		39 14	45 20			
		20 38	28 98			
		18 76	16 22			
1882		39 14	45 20		63 20	
		21 69	30 71		52 76	
		17 45	14 49		10 44	
1883			45 20	59 20		92 60
			31 89	34 87		76 83
			13 31	24 33		15 77
1884			45 20			
			31 05			
			14 15			
274						
1885		39 14	41 20			
		23 74	24 09			
		15 40	17 11			
1886		39 14	41 20	59 20		
		21 73	22 05	34 00		
		17 41	19 15	25 20		
1887		39 14	41 20	59 20		
		21 04	21 35	32 81		
		18 10	19 85	26 39		
1888		39 14	41 20	59 20		
		21 04	21 35	32 81		
		18 10	19 85	26 39		

275 *Recapitulation.*

Year.	Size.	Profit.	No.	Total.	Grand total.
1876	1 in.	$7 42	1	$7 42	
	2	14 66	2	29 32	
	3	10 73	21	225 33	
					$262 07
1887	1	5 10	1	5 10	
	2	16 61	1	16 61	
	3	16 33	28	456 24	
	4	24 07	3	72 21	
					550 16

Recapitulation—Continued.

Year.	Size.	Profit.	No.	Total.	Grand total.
1878	3 in.	17 33	17	$294 44	
	4	25 14	5	125 70	
	5	12 58	1	12 58	
					$432 76
1879	2	17 14	2	34 28	
	3	17 07	12	216 84	
	4	24 87	3	74 61	
					325 73
1880	2	18 87	1	18 87	
	3	16 36	8	130 88	
					149 75
1881	2	18 76	1	18 76	
	3	16 22	7	113 54	
					132 30
1882	2	17 45	1	17 45	
	3	14 49	12	173 88	
	5	10 44	3	31 32	
					222 65
1883	3	13 31	14	186 34	
	4	24 13	5	121 65	
	6	16 67	1	16 67	
					324 66
1884	3	14 15	7	99 05	
					99 05
1885	2	15 40	1	15 40	
	3	17 11	5	85 55	
					100 95
1886	2	17 41	1	17 41	
	3	19 15	7	134 05	
	4	25 20	6	151 20	
					302 66
1887	2	18 10	1	18 10	
	3	19 85	14	277 90	
	4	26 39	9	237 51	
					533 51
1888	2	18 10	3	54 30	
	3	19 85	12	238 20	
	4	26 39	5	131 95	
					424 45
					$3,860 61

Upon this basis the amount of damages due from the defendant to the complainant is found to be three thousand eight hundred and sixty dollars and sixty-one cents ($3,860.61).

The testimony taken by the master and the statement of Mr. Thompson are filed herewith.

All of which is respectfully submitted.

B. R. COWEN,
Special Master.

Cincinnati, September 10, 1888.

277 And afterwards, to wit, on the 10th day of September, A. D. 1888, the following testimony was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Testimony Taken Before Special Master B. R. Cowen.

The United States Circuit Court, Southern District of Ohio, Western Division.

J. M. LOCKE
vs.
THE LANE AND BODLEY COMPANY. } #3708.

Testimony taken before the special master, B. R. Cowen, in the matter of the accounting in the above-stated case.

WEDNESDAY, *August* 1, 1888—10 o'clock a. m.

Present: T. A. Logan, counsel for complainant, and L. M. Hosea, counsel for the defendant.

CHARLES F. THOMPSON, of lawful age, being first duly sworn, deposes as follows:

Am secretary and treasurer of the Lane and Bodley Company, and I present herewith an account, which is made a part of my testimony, in which is shown all the valves made by the defendant company since the date of Col. Locke's patent, Feb., 1876.

(Said statement is hereto attached and marked Exhibit "A.")

278 (Owing to the necessary absence of Mr. Logan at the State court, the hearing is adjourned until August 7th, at 2 o'clock p. m.)

TUESDAY, *August* 7—2 p. m.

Present. T. A. Logan, counsel for the complainant, and L. M. Hosea, Esq., counsel for the defendant.

Examination of Mr. THOMPSON continued:

The statement submitted includes all valves made by our company since the issue of Col. Locke's patent, the cost of manufacturing the same, and the price at which they were sold. We keep "prime cost books," which include wages paid workmen and the cost of material; have gone back over the books and found the amount of these items from year to year during the time embraced in the account. The account includes "prime cost" and foreman's wages—that is, the average amount of those items for each year and the average price at which the valves were sold. When we sell valves unattached to elevators we get more for them than when we sell them in connection with complete elevators, because those who want separate valves want them in a hurry and do not higgle at the price, whereas in the complete elevators the competition is such that the price has been reduced. The account also embraces the

percentage of the general expense account, which includes unskilled labor, repairs, charity, insurance, rent, taxes, officers' salaries, oils, fuel, &c., but does not include any charge for interest. There are
279 but two salaried officers in the company, the president and the secretary and treasurer. Their salaries are fixed by the by-laws of the company and are low, as salaries go. The account does not include any part of the profit and loss account, debit or credit. The office force and the drawing-room force are charged in the general expense account. In the statement have charged to the valve its proportion of each year's cost to the year's business.

Adjourned until August 8 at 11 o'clock a. m.

WEDNESDAY, *August* 8—11 a. m.

Present: Col. J. M. Locke, complainant, and C. F. Thompson, the last witness.

The session was occupied in the examination of the books and the verification of the statement of Mr. Thompson.

The complainant here rested.

280 *Statement of Costs & Selling Prices of Valves.*

Valves sold in 1876.

Numbered 21—3″, with machines.			
2—2 , without "			
1—1″, " "			
The average selling price of 3″ is	$43 98		
" " cost	37 64		
	6 34 x 21		$133 14
Selling price of 2″:			
Less sheaves & fixtures is	$41 20		
Cost was	26 54		
	14 66 x 2		29 32
Selling price of 1″:			
Less sheaves & fixtures	$25 20		
	17 78		
	2 42 x 1		2 42
			$169 88

Valves sold in 1877.

Numbered 25—3″, with elevators.
3—3″, separately.
1—2″, "
1—2″, "
1—1 , "
3—4″, "

281	Sold 2″ at	46 38		
	Cost	32 04		
		14 34 x 25		358 50
	1 3″ sold at	50 70		
	Cost	32 04		
				18 66
	1 3″ sold at	43 70		
	Cost	32 04		
				11 66
	1 3″ sold at	50 70		
	Less sheaves, &c., cost	32 04		
				18 66
	1 1″ sold at	27 20		
	Less sheaves, &c., cost	22 10		
				5 10
	3 4″ sold at	59 20	177 60	
	Cost	35 13	105 39	
				72 21
	1 2″ sold at	39 14		
	Cost	22 53		
				16 61
				501 40

Valves sold in 1878.

Number 17—3″, with elevators.
5—1″, " "
1—5″, " "

Sold 3″ for	34 20		
Cost	31 05		
	3 15 x 17		53 55
282 Sold 4″ for	39 98		
Cost	34 06		
	5 92 x 5		29 60

Sold 1 5″	59 81		
Cost	50 67		
			9 14
			92 29

Valves sold in 1879.

Sold 12 3″, with elevator.			
3 4″, " "			
2 2″.			
11 3″ sold for	43 98	483 78	
Cost	31 30	344 20	
			139 58
3 4″ sold for	51 41	154 23	
Cost	34 33	102 99	
			51 24
2 2″	36 58	73 16	
Cost	22 00	44 00	
			29 16
			209 98
Add one 3″			12 68
			232 56

Valves sold in 1880.

	Sold with elevator—			
	8 3″.			
	1 2″.			
283	8 3″ sold for	43 98	351 84	
	Cost	28 84	230 72	
				121 12
1 2″, sold for		36 58		
Cost		20 27		
				16 31
				137 43

Valves sold in 1881.

Sold 6 3″, with elevator, at	41 54	249 24	
Cost	28 98	173 88	
			75 36
1 addl. 3″	41 54		
	28 98		
			12 56

1 2″ sold at	34 55		
	20 38		
			14 17
			102 09

Valves sold in 1882.

11 3″, with elevator, sold at	41 54	456 94	
Cost	30 71	337 81	
			119 13
1 2″ sold at	34 55		
Cost	21 69		
			12 86
1 3″, no elevator, less sheaves, etc.	45 20		
Cost	30 71		
			14 49
3 5″, no elevator, sold for	63 20		
Less sheaves, etc.		189 60	
Cost	52 76	158 28	
			31 32
			177 80

284 Valves sold in 1883.

1 6″, with elevators.			
5 4″, " "			
14 3″, " "			
1 6″ sold at	92 90		
Cost	76 23		
			16 87
5 4″ sold at	45 70		
Cost	34 87		
	10 83 x 5		54 15
14 3″ sold at	39 09		
Cost	31 89		
	7 20 x 14		100 80
			171 62

Valves sold in 1884.

7 3″, sold at	37 63	263 41	
Cost	31 05	217 35	
			46 06

Valves sold in 1885.

5 3″, sold at	33 72		
Cost	24 09		
		9 63	48 15
1 2″, sold at	28 04		
Cost	23 74		
		4 30	4 30
			52 45

285 Valves sold in 1886.

6 4″, with elevators.			
7 3″, " "			
1 2″, " "			
6 4″ sold at	39 41		
Cost	34 00		
		5 41	32 46
7 3″ sold at	33 72		
Cost	22 05		
		11 67	81 69
1 2″ sold at	28 94		
Cost	21 73		
		7 21	
			121 36

Valves sold in 1887.

9 4″, with elevators.			
13 3″, " "			
1 3, without elevators.			
1 2″, " "			
9 4″ sold at	41 79		
Cost	32 81		
		8 89	80 04
13 3″ sold at	35 68		
Cost	21 35		
		14 33	186 29
1 3″ sold at	41 20		
Less sheaves, etc., cost	21 35		
			19 85

286	1 2″ sold at		29 67	
	Cost		21 04	
				8 62
				294 78

Valves sold in 1888.

5 4″, with elevator.
5 3″, " "
7 3″ on hand.
3 2 " "

5 4″ sold at		41 70		
Cost		32 81		
		8 89 x 5	44 45	
5 3″ sold at		35 68		
Cost		21 38		
		14 30 x 5	71 50	115 85
7 2″ on hand, say, at			14 30	100 10
3 2″			8 63	25 89
				241 94

287 *Recapitulation.*

1876.	Profit	169 88
1877.	"	501 40
1878.	"	92 29
1879.	"	232 56
1880.	"	137 43
1881.	"	102 09
1882.	"	177 80
1883.	"	171 62
1884.	"	46 06
1885.	"	52 45
1886.	"	121 36
1887.	"	294 78
1888.	"	241 94
		$2,341 66

288 And afterwards, to wit, on the 12th day of September, A. D. 1888, the following motion was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Motion.

U. S. Circuit Court.

LOCKE
v.
LANE & BODLEY CO. } No. 3708.

Motion by complainant to confirm the report of the special master heretofore filed.

LOGAN AND SLATTERY, *Att'ys.*

Sept. 12, 1888.

And afterwards, to wit, on the 30th day of November, A. D. 1888, the following exceptions *was* filed in the clerk's office *was filed in the clerk's office* of said court, clothed in the words and figures following, to wit:

The United States Circuit Court, Southern District of Ohio, Western Division.

J. M. LOCKE
vs.
THE LANE AND BODLEY CO. } No. 3708.

Exceptions to Master's Report.

289 Now comes the defendant and excepts to the report of the master herein, filed September 10, 1888, in the particulars and for the reasons following, to wit:

(1.) Said reports finds 221 valves manufactured, of which 10 are still on hand unsold, yet assumes and finds profits upon the 10 unsold valves and awards same against defendant to the amount of about $225, which should be deducted from the total profit found due.

(2.) Said report assumes gratuitously and without evidence in support thereof:

(1) That "in this case there are some peculier conditions, which may be sufficient to modify the rule of 'ascertaining profit'" by deducting net cost of production and sale from price received (page 3, line 15), which are (2) the defendant "used the valve to sell its elevators" (p. 2, l. 19), so that "by the use of it in elevators at a price, say, of $50, the defendant was able to sell the machine of which the valve was an indespensable part for from $100 to $900;" (3) that during the time the valve has been used by the defendant it "made use of $110.50 worth of valves, and by such use was enabled to sell $165,750 worth of its other machinery manufacturers," (4) and this indicates that there was a "profit" (meaning a "benefit" in the sale of other goods) to the defendant in the use of the valves not apparent in the statement of Mr. Thompson."

And, while admitting the "impossibility" (p. 4, line*n* 8) of placing a money value upon these "irregularities," the master proceeds to assign item 2 in the foregoing résumé as a cause, arbitrarily "finding" a "measure of damages" nearly double the actual profit
290 made and received by the defendant, and thus finds and awards $3,860.81 as "damages" against the defendant, whereas the testimony shows only $2,320.26 as the total profit realized.

The master is, by the prayer of the petition, the terms of the decree, and the facts and circumstances of the case, limited in his inquiry to ascertaining the profits actually made by the defendant. "Damages," apart from actual profits, are not involved.

The inquiry into profits realized in the sale of other goods and the finding of a "measure of damages" beyond and above actual profit on the valves is altogether beyond the scope of the master's powers and duty.

The complainant having offered no testimony and having demanded and accepted the sworn statement and account of the defendant without objection is bound by it, and the master should have found the actual profit to be $2,320.26, less the unsold valves on hand, and his report should be corrected accordingly and the argumentative clauses of said report relating to the sale of other machinery should be stricken out.

(3.) Said report also contains argumentative clauses to the prejudice of the defendant (for example, that number 2 on page 3 of the report), making it appear that the trade discounts actually made by the defendants on sales should not be allowed, upon the assumption (without any evidence whatever) that the valve is a relatively more costly part of the elevator, and that such deductions bear unfairly upon the same. The report admits that this cannot be measured pecuniarily and it does not enter into the finding. It should
291 therefore be eliminated from the report.

The report, continuing, finds that valves were sold separately at a higher price than those sold in connection with elevators, and argues thence that "the defendant sold valves to itself to use in elevators at a less price than they sold them to others," and "this is a discrimination against the valve," and "the defendant can afford to pay and ought to pay as much -or valves as it charged others for the same."

These views and the finding of the master of a "measure of damages" punitive against the defendant very clearly usurp the functions of the court itself and as clearly transcend the powers and duties of a master.

But, apart from this, they are very clearly wrong in principle, since the valve itself is but an adjunct of the elevator, and is properly sold with and as part of it; and when sold separately at a higher price the complainant receives the benefit of such price and is rather benefitted to this extent than injured by the legitimate sales at lower prices.

The radical error of the master in inverting the pyramid and making the elevator, which is the principal thing, secondary to the

valve, which is a mere adjunct, vitiates his entire report, so far, at least, as relates to a finding beyond the actual profit realized and reported.

292 The report should be corrected and the finding reduced to $2,095, being the actual profit realized on the valves sold.

Respectfully submitted.

L. M. HOSEA,
For Defendant.

Cincinnati, 27 November, 1888.

And afterwards, to wit, on the 19th day of March, A. D. 1889, an entry was made upon the journal of said court, clothed in the words and figures following, to wit:

Journal Y, p. 264.

This cause came on to be heard upon the report of B. R. Cowen, Esq., to whom, as a master of this court, it was referred to ascertain and report the amount, if any, due from the defendants to the complainant, which report is dated the 10th day of September, 1888, and also upon the exceptions to said report filed by the said defendants; thereupon was argued by counsel and submitted to the court.

The court, being fully advised in the premises, does overrule the said exceptions of the defendants and does find that the said report of the master should be confirmed, except as to the items of ten valves in the possession of the defendants, which remained unsold at the time of the prior decree herein. As to the amount of the value of the said ten valves being $193 25, the court does find that the said amount should be deducted from the amount found to be due in the report aforesaid, and as to all the other matters

293 and things in the said report contained the report of the *of the* master is hereby confirmed.

Wherefore it is by the court adjudged and decreed that the said defendants pay to the said plaintiff the sum of ($3,667.37) three thousand six hundred and sixty-seven $\frac{36}{100}$ —, with interest thereon from the 5th day of February, 1889, the first day of the present term of this court, being the amount found due by said master, less the amount of the valves aforesaid, and, further, that the said plaintiff recover his costs in this behalf expended, taxed at $—, including a fee of $150 to the special master, which is hereby allowed, and that execution issue therefor.

And thereupon came the defendant, The Lane and Bodley Company, by its counsel, L. M. Hosea, Esq., and in open court prayed an appeal to the Supreme Court of the United States, which is allowed by the court upon defendant giving bond in the sum of $7,335.74, with sufficient surety to the satisfaction of the court.

And afterwards, to wit, on the 15th day of April, A. D. 1889, the following supersedeas bond was filed in the clerk's office of said court, clothed in the words and figures following, to wit:

Supersedeas Bond.

Circuit Court of the United States, Southern District of Ohio, Western Division, *ss:*

JOSEPH M. LOCKE
vs.
THE LANE AND BODLEY CO.

Know all men by these presents that we, The Lane and
294 *and* Bodley Company, as principal, and Philander P. Lane and James L. Havern, are held and firmly bound unto Joseph M. Locke in the sum of seven thousand three hundred and thirty-five dollars, to be paid to the said Joseph M. Locke, his executors or administrators; to which payment, well and truly to be made, we bind ourselves and each of us, jointly and severally, and our and each of our heirs, executors, and administrators, firmly by these presents.

Sealed with our seals. Dated this — day of ——, 18—.

Whereas the above-named The Lane and Bo*dd*ey Company have taken out an appeal to the Supreme Court of the United States of America to reverse the decree rendered in the above-entitled action by the circuit court of the United States for the southern district of Ohio:

Now, therefore, the condition of this obligation is such that if the above-named The Lane and Bodley Co. shall prosecute its said appeal to effect and answer all judgments and costs if it shall fail to make good its plea, then this obligation to be void; otherwise to remain in full force and virtue.

PHILANDER P. LANE. [SEAL.]
JAMES L. HAVEN. [SEAL.]

Sealed and delivered in presence of—
ROB'T C. GEORGI.
B. E. DILLEY.

The security is approved.

GEO. R. SAGE,
District Judge of the United States, S. D. Ohio.

295 SOUTHERN DISTRICT OF OHIO, *ss:*

I, Philander P. Lane, one of the sureties above named, do solemnly swear that, after paying my just debts and liabilities, I am worth eight thousand dollars in real estate in my own name situate in the county of Hamilton.

PHILANDER P. LANE.

Sworn to before me the 15th day of April, 1889.

[SEAL.] ROB'T C. GEORGI,
Deputy Clerk U. S. Cir. C't, S. D. O.

SOUTHERN DISTRICT OF OHIO, *ss:*

I, James L. Haven, one of the sureties above named, do solemnly swear that, after paying my just debts and liabilities, I am worth eight thousand dollars in real estate and personal property in my own name situate in the county of Hamilton, in said district.

JAMES L. HAVEN.

Sworn to before me the 15th day of April, 1889.

ROB'T C. GEORGI,
Deputy Clerk U. S. Cir. C't, S. D. O. [SEAL.]

296 UNITED STATES OF AMERICA, *Southern District of Ohio, Western Division,* } *ss:*

I, Benjamin R. Cowen, clerk of the circuit court of the United States within and for the district and division aforesaid, do hereby certify that the foregoing is a true and complete transcript of the proceedings had by and before said court as the same appears of record and on file in the clerk's office of said court in the cause entitled Joseph M. Locke, complainant, against The Lane and Bodley Company, respondent, and numbered 3708.

Seal of the Circuit Court, South'n Dist. of Ohio.

In testimony whereof I have hereunto set my hand and affixed the seal of the said court, at Cincinnati, O., this 14th day of August, A. D. 1889.

B. R. COWEN,
Clerk U. S. Circuit Court, S. D. O.,
By R. C. GEORGI,
Deputy.

297 THE UNITED STATES OF AMERICA, *ss:*

To Joseph M. Locke, Greeting:

Whereas The Lane & Bodley Company has lately appealed to the Supreme Court of the United States from a decree lately rendered in the circuit court of the United States for the southern district of Ohio, made in favor of you, the said Joseph M. Locke, and has filed the security required by law, you are therefore hereby cited to appear before the said Supreme Court, at the city of Washington, on the second Monday of October next, to do and receive what may appertain to justice to be done in the premises.

Given under my hand, at the city of Cincinnati, in the sixth circuit, this 15th day of April, in the year of our Lord one thousand eight hundred and eighty-nine.

[Seal of the Circuit Court, South'n Dist. of Ohio.]

GEO. R. SAGE,
Judge of the U. S. District Court within and for the Southern District of Ohio, Sitting and Holding Circuit Court, there being no Circuit Judge or Associate Justice in the District.

298 [Endorsed:] 173. 4, 15, '89. United States circuit court, S. D. O., W. D. No. 3708. Joseph M. Locke *vs.* The Lane & Bodley Co. Citation to appellee. Filed Apr. 23, 1889. B. R. Cowen, clerk.

Received this writ at Cincinnati, Ohio, on the 15th day of April, 1889, and at said Cincinnati, Ohio, on the 20th day of April, 1889, I served the same by handing a true copy thereof, having all the endorsements thereon, to Joseph M. Locke personally.

H. C. URNER,
U. S. Marshal,
By J. KIERSTAT, *Deputy.*

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Endorsed on cover: Case No. 13,914. S. Ohio C. C. U. S. No. 283. The Lane & Bodley Company, appellant, *vs.* Joseph M. Locke. Filed Nov. 8, 1889.

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CLERK.

UNITED STATES SUPREME COURT.

THE LANE & BODLEY CO.

— *vs.* —

JOSEPH M. LOCKE,

APPELLANT'S BRIEF.

L. M. HOSEA,
FOR APPELLANT.

H. WATKIN, PRINT, 28 LONGWORTH ST. CIN.

Supreme Court of the United States.

THE LANE & BODLEY COMPANY,
vs.
JOSEPH M. LOCKE.

BRIEF FOR APPELLANT.*

BILL.—This case arose in the Circuit Court for the Southern District of Ohio, upon a bill filed by Joseph M. Locke, November 26, 1884, alleging infringement by the Lane & Bodley Co., a corporation, etc., of Cincinnati, Ohio, of Letters Patent No. 173,653, dated February 15, 1876, for an "Improvement in three-way balanced stop-valves," issued to said Locke, as inventor. The bill contained the usual allegations, and a prayer for injunction and other relief (1).

ANSWER.—The answer of respondents, filed January 24, 1885, contained, in substance, the following defenses:—

1. A denial that the alleged improvement was an invention at the date of its production by said Locke, because the same devices, or material parts thereof, were shown in earlier patents and publications, as follows:—

> Patent No. 132,526, to Dunlap, dated Oct. 29, 1872.
> Patent No. 143,263, to Vaughan, dated Sept. 30, 1873.
> Publications, viz: Rankine's "Manual of the Steam Engine, and other Prime Movers."

2. An allegation of public knowledge, and use of similar devices, citing witnesses.

3. A narrative allegation of the character of said Locke's employment, and the origin, development, marketing, and continued use of the alleged improvement, showing the acquisition by Lane & Bodley of an indefeasible license, and survival and confirmation of the same to the Lane & Bodley Co.

4. A narrative allegation of the origin and development of the alleged improvement, showing that the subject matter was

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* Figures in parenthesis, other than dates, etc., immediately following a statement of fact, indicate the page of the printed Record on which the verification may be found.

not the sole invention of said Locke, and the patent therefore void.

5. A denial of wrongful act or intent; or of notice as alleged in the bill.

6. A prayer to be dismissed (6).

AMENDED ANSWER.—Subsequently, on February 12, 1886, an amended answer was filed, setting up, by way of addition to former defenses, an equitable right to the patent, based upon a written agreement of said Locke (15).

REPLICATION.—To all of which the complainant filed a general replication (10).

HEARING AND DECREE.—On the issue thus presented, testimony was taken, and the cause argued and submitted to the Court, which, about one year after the submission, rendered its decree for complainant, and referred the cause to a master (153). On September 10, 1888, the master reported three thousand eight hundred and sixty dollars and sixty-one cents ($3,860.61) damages—about double the amount of the actual profits—upon a theory of benefits to other parts of defendants' business (164); and the Court, having overruled all objections of record (177), entered its final decree for this amount (179), from which decree this appeal was taken (179).

ERROR IN DECREE.—The opinion and decree of the court below is thought to be erroneous in several particulars:

1. The bill should have been dismissed for the reason, among others, that the license set up as a defense was clearly proven by evidence, and admitted and confirmed by the complainant; and moreover the essential basis of such right was found as a fact by the Court in its opinion (161). The right of defendants to use the invention was established; the entire basis of the equity proceeding was demolished; and no question remained but a purely legal one of compensation.

2. The Court erred in decreeing the validity of the patent.

3. If valid, the Court overlooked the fact that two, certainly, of its three claims were anticipated by the references, and were void. This is irrespective of any difference of view as to the validity of the patent generally.

4. The Court erroneously applied a principle of decision announced by this Court in *Hapgood* v. *Hewitt*, and denied that rights acquired by the predecessor of the Lane & Bodley Co. survived to the Company.

5. The report of the master was erroneous in finding, and the decree of the Court in awarding, more than nominal damages. The patent at best is for a mere improvement, as found by the Court (160), and there is no testimony whatever showing that its saleability was due to the improvement; and no testimony apportioning the profit to the improvement. The profit was awarded upon the entire device, and then arbitrarily increased upon wholly unwarranted grounds.

6. The decree is erroneous as to the amount of profit awarded under any aspect of the case whatever. The master having before him simply a statement from the books of defendant as to the number of valves manufactured, and some of the elements of profit, he reports about double the actual profit, upon the unique ground of collateral benefit to defendants' general business. Certainly no more than the actual profit made can be recovered as profit. In this case not a single element of damage is shown, as admitted by the master (165), and the finding is made wholly upon gratuitous assumptions, and upon a basis distinctly erroneous in law.

The Case Upon the Testimony.

NOTE.—The Record as printed is confusing, in that it presents the testimony without regard to the order of dates on which it was taken. To appreciate its force and character the testimony must be read in the order in which the witnesses were examined, and the case was developed. This was as follows;

1.	Locke,	opening for complainant, June 10, 1885,	p. 11.
2.	Lane,	defendant, January 15, 1886,	p. 92.
	Stanwood,	" " 15, 1886,	p. 104.
	Thompson,	" " 15, 1886,	p. 121.
3.	Locke,	2d deposition for complainant, Feb. 18, 1886,	p. 24.
	McGowan,	" " 18, 1886,	p. 88.
	Schnier,	" " 18, 1886,	p. 22.
4.	Thompson,	defendant, May 3, 1886,	p. 131.
	Lane,	" " 3, 1886,	p. 150.
5.	Locke,	3d deposition for complainant, May 7, 1886,	p. 17.

The main defense in the case, namely, a license or shop right in the Lane & Bodley Co., involving a full history of the relation of parties, and the production of the invention, was presented by Col. Lane and Mr. Thompson, before the second deposition of Locke. The new matter, and the surprising coloring of the old, presented by Locke in this answering testimony, made the second deposition of Lane and Thompson necessary. It is only, therefore, by reading the testimony in the above order that the bearing of one part upon another can be understood. It is a fact of highest significance in the discussion of this case, that, before Locke testified upon the *res gestæ*, he had read and heard the testimony of the other side.

General Facts.

The firm of Lane & Bodley, were, in the autumn of 1871, engaged in business at Cincinnati, as general machinists. They had just begun the manufacture of hydraulic elevators, and, on November 21, 1871, employed Mr. Locke upon his own solicitation (51) and representations of ability in this direction (51) (93), as designing engineer and draughtsman, to assist them in the development (122) and construction of elevators and other machinery (93), at a salary of twelve hundred dollars ($1,200.00) per year, subsequently increased to two thousand ($2,000.00) (84) (122). Early in their experience with the first elevators built, it was found that the muddy water used at Cincinnati produced such wear of the regulating valves as to make a change necessary (94).

Among the first duties of Locke was in designing such a valve (26) (63). After a number of such designs were made by him, some of which were constructed, put to use, and found to be failures (66), a certain form of piston valve was adopted, which, modified by subsequent changes, was, in August, 1872, made to answer its purpose successfully, and immediately went into use in manufacture (79), and so continued down to the bringing of this suit (95). Many were built and sold during Locke's engagement with them (79), which terminated in 1874. Upon leaving them Locke went to Salt Lake City, where he remained, with frequent visits to Cincinnati—once or twice a year—(156), until the bringing of this suit in 1884. During this period, he was more or less continuously in their employ as consulting engineer (123), and from 1880 to 1884, they paid him a salary of two thousand dollars ($2,000.00) per year with contribution of twenty dollars ($20.00) per month for office rent (84). During this period of ten years, he was instrumental in effecting sales of elevators, embodying the valve, for the firm and company, in the West (76–78).

It is positively asserted by Col. Lane (101) and Mr. Thompson (123), that Locke knew that they were manufacturing and selling the valve, and made no claim or objection (101), and this Locke does not deny. Locke says that he "believed" (86) they were manufacturing them, but he did not have "positive knowledge" of the fact, except by "inference" (76), because he did not personally examine the elevators sold to his neighborhood, although he "believed" they embodied the valve (77); but he admits that during his visits to Cincinnati, he had free access to the drawing room (62) and to the shop, where it appears the work of building elevators and valves was constantly going on (156).

In 1876—two years after leaving the employ of Lane & Bodley,—Locke took a patent upon the valve in question. He admits that he gave no notice of his intention to do so (79, 125); and the testimony is positive and undisputed that the first intimation of the fact was notice of its issue in the *Patent Office Gaz-*

ette (124, 99). Col. Lane says that no action of any kind was taken by them upon receiving this notice, although they were very much surprised, because the circumstances attending the production of the valve were such as to clearly establish their right in it, which Locke's acquiescence and silence confirmed; and further, that, as they felt kindly towards Locke, and were aware of his straitened circumstances, they were willing that he should derive any benefit which might accrue to him from its general introduction outside of their own business (157). Meantime, in 1876, the firm of Lane & Bodley was merged into the Lane & Bodley Co., a corporation succeeding to all the rights, carrying on the same business in the same place, with the same parties, and identical in all respects with the old firm (Stipulation p. 90). Locke also refers to the Co. as "successor to the firm (83, 39).

The learned Judge below fell into a serious error which may be important. In his decision he says that the firm was dissolved in 1876, by the death of Mr. Bodley and of Mr. Britt (162). [The Record does not so state. On the contrary, the fact is that Mr. Bodley died many years before, as also did Mr. Britt. The interest of their personal representatives had been carried along, although Col. Lane was then by far the largest owner, and in control of the business. The change of the firm into a corporation was simply and obviously for the purpose of dealing more satisfactorily with the interests of the deceased partners. How far this misapprehension of fact may have influenced the Court below, in applying the rule of *Hapgood* v. *Hewitt*, cannot be determined; but I contend that the rule of *Hapgood* v. *Hewitt* has no application here; for the rights acquired by the firm were confirmed and established in the succeeding corporation by the acquiescence of Locke for a period of eight years after the corporation was formed.]

Col. Lane testifies that the valve in dispute had its origin in a valve exhibited in Rankine's book on "Prime Movers" (94) (see "Exhibit No. 7"); that after other unsuccessful constructions, they concluded to adopt the form of piston-valve shown by Rankine, with the addition of leather packing. Their first attempt in this direction is shown in "Exhibit No. 4," in which, as Col. Lane says, was embodied Col. Locke's suggestion of omitting the serrate edges of the valve plunger, and relying upon a conical end of the valve for graduation (94). He says further, without denial by Locke, that the pencil marks on "Exhibit No. 4," showing the dentate edge, were placed there by him personally or by his direction (94), and the valve was then made as shown in "Exhibit No. 5," embodying this feature. Both he and Mr. Thompson testify that the Rankine book, or some similar representation of this valve, was present in the drawing room, and was freely consulted and discussed by them and by Mr. Locke (94) (153); and that from it the modifications made, as already stated, grew out of the joint experience of

previous efforts and failures made by and at the expense of the firm (94, 101).

If the statements of Col. Lane and Mr. Thompson are true, coupled with the other undisputed facts previously referred to, there can be no doubt that the firm acquired an indefeasible right to the continued use of the valve, even admitting Locke's technical ownership by virtue of the patent subsequently obtained. For it will be apparent, upon this state of fact, that the invention was based upon the previous tentative efforts and failures of the firm, with whom Locke was associated in a common effort to solve the problem, and by whom he was paid, and who were therefore certainly entitled, under all equitable considerations, to share in some degree, in the fruits of these efforts. Locke, on the other hand, after having heard and read all this testimony, presents only his own unsupported counter-statement (24) (18), characterized by remarkable nebulousness upon all critical points. His testimony requires a somewhat critical examination.

Having read the testimony of Col. Lane (31), he says (*a*), that in the early fall of 1871, his attention was drawn to an elevator being built at the business house of Bare, Shinkle & Co., and he went there to see it. Seeing it in course of construction, he perceived that the regulating valve was the vital feature of such mechanism; and in conversations had there with Col. Lane, laid down the essential conditions of a perfect valve, and invented one to fulfill these conditions (25). He solicited employment of Lane & Bodley, setting forth as an inducement his especial familiarity with hydraulic constructions (51), and entered upon duty November 21. His first duties were concerned with plans for an elevator-regulating valve (26), and to put into shape plans as furnished him (27),—the disc-valve ("Exhibit No. 1") being then under construction. He objected in advance to the disc-valve, but his objections were overruled, and several valves were made to overcome defects without success (27). The second form of valve adopted, called a "bonnet-valve," is shown in "Exhibit No. 2" (27). The next, is shown in complainant's exhibit, "Locke's sketch No. 1" (28).

He further says (*b*), that in view of the unsatisfactory results of these various experiments, and at the personal request of Col. Lane, he brought from his home sketches (28) of a valve he had invented prior to his engagement; that Col. Lane objected to the serrated graduating device upon the ground of infringement upon the Judson governor patent (29); and, by his direction, the valve was made as shown in "Exhibit No. 4," which proved unsatisfactory. The drawings were then recast as shown by "Exhibit No. 5," in which the serrated graduations of his original plan were restored, "making in fact a reproduction of the original sketch" (29).

Locke further says (*c*), that he never saw the Rankine book in the Lane & Bodley drawing room, until he, (Locke,) called

Col. Lane's attention to the existence of such a work, November 2, 1872, and purchased it for the Lane & Bodley Co. (46, 48), and identifies the book produced with the copy purchased. He says broadly that he had no knowledge that the Lane & Bodley people were making and selling his patented valve, by reason of his absence in the West. Further, that the valve in question was not an alteration of the Rankine device, as no knowledge of that device was had until obtained from the book purchased by Locke in 1872 (48).

He further says (*d*), that on April 10, 1875, when about to return to the West from a brief visit in Cincinnati, "Col. Lane broached the subject of his pending patent," asking him what royalty on valves he proposed charging them. Locke replied, "Twenty-five dollars." Col. Lane then remarked, "that would be satisfactory when he (Locke) got a good patent" (38). Locke returned to Cincinnati again in May, 1876, and followed Col. Lane to Philadelphia, where he again opened up the subject of the valve, but Col. Lane declined a business discussion, on the ground that he was recreating with a portion of his family (39). Locke then returned to the West, where he remained, with occasional visits to Cincinnati, until the summer of 1884 (39).

He then (*e*) gives a quotation from his diary, which, as it will be seen from its photographic reproduction, is an entry bearing every evidence of being an interpolation, detailing an interview, in which, upon his demand for a settlement of the valve matter, discussion was again refused by Col. Lane, to which Locke replied, "You seem to have changed your views very much since I left here in 1874." And Lane rejoined, "Yes, I know more now than I did then" (39). On August 30, 1884, two days after the interview, he wrote a letter severing his connection with them (39). (Exhibit No. 9.)

On cross-examination some of the foregoing statements are considerably modified. He forcibly reiterates the assertion of his visit to the Bare, Shinkle & Howell elevator, and of his invention being the "out growth" of the device then being erected (51), and of the discussions at that place and time with Col. Lane of the requisite qualities of a regulator. He refers to four specific interviews at this place with Col. Lane, beginning in October and extending into November, 1871.

The testimony of Locke must be construed with reference to the "ordinary laws that govern human conduct."

He was a professional engineer, claiming to be well acquainted with this class of mechanism, and refers to experience that would seem to lead him to become vitally interested in the particular devices in issue. He was a man of education, and evidently realized that his claim to have anticipated, in advance of actual experience, the result of subsequent trials and failures, must be supported and established by circumstances of more than ordinary moment. Something was needed to account for the stimulation of his mental faculties to a degree giving him

a prescience rarely vouchsafed to genius of the highest order. He therefore refers the inception and completion of his invention to an unusually strong impression produced by visits made in company with Col. Lane to the "apparatus under construction," conveying the idea that he was deeply impressed by witnessing the actual working apparatus in substatially completed form.

The "ordinary laws regulating human conduct" require us to expect clear and explicit details, firmly established in his memory. Facts capable of "setting the mind on fire," and enabling it to create and perfect results which the ablest intellects of professional life had only approximated, would certainly never be forgotten.

It was something of a surprise, therefore, to find, upon cross-examination, a nebulousness and want of recollection totally inconsistent with his assumption.

(*a*) He is reluctantly forced to admit, point by point, that he can tell absolutely nothing about it—of what machinery was on the ground; how far the work had progressed; whom he saw there; or whether, indeed, there was even a hole in the ground. He is unable to give a single circumstance of those which, if his story was true, would have impressed themselves indelibly upon his memory (21, 52, 53, 54, 55). But his story was not true. Misled, as afterwards appears, by Col. Lane's opening reference to the B., S. & H. elevator, he fabricated the entire story as a basis for claiming the invention of the valve as precedent to his employment. In the second deposition of Lane and Thompson, after a renewed search for documentary evidence, it is shown by book entries that the initial order for the B., S. & H. elevator was not given until October 28, 1871; that no work on it was turned out until December 6, 1871, and that the first duties of Locke in the drawing room, was calculations and designs for this elevator (132, 133, 63).

(*b*) Upon the history of the work done in the early part of his engagement, the cross-examination shows that so far from merely putting into shape the plans furnished him, all the plans discussed and tried were his own (65), which he coolly claims that he was "volunteering" to help them out of an embarrassing "predicament" (70), and that after the failure of all these devices, he was requested by Col. Lane to bring the sketches of the valve he had previously invented.

He variously says that he had told Col. Lane of his invention subsequently to his engagement (32, 67); did not communicate it to any one before engagement (58), may have been prior thereto (71), and his impression is that it was before (71), but cannot fix time or place, or tell what was said, or give any collateral event (72); but that no one was present (74).

The original sketches of this invention were "mostly destroyed" (58); these were but two sheets (79), afterwards taken home and probably lost (79); and Exhibit No. 4 was made direct from these sketches, except changing the serrated device by or-

der of Col. Lane, who was afraid of infringing the Judson Governor patent (68).

No claim was made to Lane & Bodley, upon bringing the sketches (69), no discussion about it (69), and no proposition was made on either side in regard to their use (79). The sketches were made at home of evenings while making the visits to the B., S. & H. elevator (59); made no communication of it to others (58); filed no caveat (61), and in brief he presents no corroborating circumstances whatever.

The answer to this is explicit. The "very remarkable testimony of Col. Locke made it necessary to go back and examine the dates with more care" (153), and renewed search for documents was made among the books, and in the drawing room (139), with the following result:

"No such interviews at the B., S. & H. elevator prior to the engagement of Locke ever took place" (133, 150), for the very good reason, shown by the books of the firm, that the preliminary order for the elevator was not taken until October 28, 1871, the city water connections were put in November 23, 1871, the extension into the building was made December 5, 1871, and final connections to the machine were made December 30, 1871 (132). The first work on the machinery in the shop was the wooden patterns, begun November 22, 1871 (132); and the work then progressed to completion in December as stated—December 6 being the first work done at the building by way of erection—all dates being shown by time books, etc., produced by the witnesses, and exhibited to counsel (141). In view of these documentary facts, the nebulous character of Mr. Locke's reminiscences is quite explainable. As Col. Lane puts it, "As for having an interview with him at B., S. & H.'s, in discussing elevators there, it was impossible, for there was no elevator to be discussed" (151). One is reminded of the legal anecdote of the cross-examination of a witness to a will, who testified that he saw the testator seal it with sealing wax, having melted the wax with a candle and applied it in the presence of the witness. The cross-examiner arose with the will in his hand, and removing his thumb from the seal which had remained covered, presented it to the court remarking, "My Lords, it is a wafer!" This detail of the origin of the invention is thus conclusvely proved to be a sheer fabrication. But this is not all.

As part of the same history, Locke testifies that he made the invention without any knowledge of the Rankine device, and that the working drawings (Exhibits Nos. 4, 5.) were made directly from his sketches. He had also testified that his device had "no dash-pot at anytime connected with it, or on the sketch" (84). In answer to this a number of old memorandum books called "blotters," used in the drawing room for jotting down plans and calculations relating to the work in hand, are produced. (Exhibits 10 to 18.) These are identified and admitted as the work of Locke, and their dates established by the

work upon them (135). One of these contains the original sketches and memoranda of the trial devices suggested by Locke, and previously explained in his testimony. (Exhibit No. 12.) But prominent among them upon the same sheet, and evidently placed there in connection with the others, is the sketch of the identical valve in controversy (reference letter A, Exhibit No. 12.), corroborating in every detail the previous testimony of Col. Lane, "After having the various kinds of valves illustrated by sketches, I decided we would make the disc-valve" (94). "There were a great many devices suggested, and sketches which were considered important, but finally abandoned. There were other drawings which do not seem to have been preserved; but the manufacture finally settled upon the form as we have represented here" (96). After the discovery of the blotters, Col. Lane identified them as "sketches of several kinds of valves which were made while we were considering the construction of hydraulic valves for use in the hydraulic elevator" (151).

(*c*) The mere existence of these blotters refutes Locke's statement; but, upon placing sketch A, Exhibit No. 12, alongside of the cut of the Rankine valve, shown in Exhibit No. 7, a singularly exact correspondence will be found to exist; so close it is perfectly obvious that the sketch was made directly from the Rankine book, embodying the first modifications made with a view of introducing the leather packing. The proportions of the casing, the arrangement of the lateral openings are exactly the same, and even the "dash-pot" found in the Rankine illustration is there. The alleged ignorance of the Rankine device is also shown to be false, and Locke's entire narrative of the origin of his invention is thus conclusively discredited. Exhibit No. 12 is a witness, without bias, prejudice, or self-interest. It shows the original sketches of the "bonnet-valve," of the "disc-valve," of the "flap-valve," and various other tentative suggestions, together on the same sheet of paper, evidently made at the same time and under the same circumstances, by which its date is conclusively fixed prior to the alleged bringing of the sketches.

Still another important fact in connection with Locke's alleged bringing of the sketches, is, the reason assigned by him for leaving off the serrations, namely: that Col. Lane was afraid of infringing the Judson patent. It is shown in answer that the Judson patent expired in 1871, and that the fact was well-known to Lane & Bodley (134).

The alleged conversation of 1875, in which Col. Lane "broached" the subject of the valve, and arranged terms of royalty, like that of 1876 in which discussion of the subject was declined, scarcely needs the explicit denial of Col. Lane. They violate all the "ordinary laws that govern human conduct."

Apart from all conflict of testimony, the attitude and conduct of all parties at the time, show that the circumstances were not

then regarded as the foundation for any claim against the Company. Even upon Locke's own showing, he made no proposition, and received none when the sketches were brought, and admits that nothing whatever was said to him, or by him, thereafter about it. It is shown that the firm sold the valve without royalty, treating it as any other merchandise (124).

The letter of 1873 also has a most important bearing here. Is it consistent with the "ordinary laws governing human conduct" to suppose, that, if the valve in question was recognized as Locke's invention, and the use of it by the firm was subject to further negotiation, as necessarily implied in the alleged "broaching of the subject" by Col. Lane in 1875, the letter of 1873 would have been wholly silent in regard to it? Is it conceivable that a firm so jealous of its own control of its affairs, as Locke testifies, and anxious to possess a valve "entirely their own" (67), would have committed themselves blindly to an obligation by requesting his personal aid outside of his employment to "help them out of a predicament," and then, when the opportunity for settlement in relation to other kindred matters arose, be wholly silent in regard to it?

Further, if, as he claims, the relation of contract was tacitly understood, why did he exercise such apparent secrecy in applying for his patent—when good faith upon the basis of the letter of 1873 required him to notify them, and secure their co-operation in regard to it?

Still again, is it conceivable that a voluntary "broaching of the subject" in 1875, and an agreement to pay royalty "when a good patent was obtained," should be followed in 1876, by a refusal to consider the subject, and a total silence thereafter for eight years, particularly while cordial business relations continued—so cordial as to involve the free loaning of money, and employment for half that period at a large salary?

The reason alleged by Locke to have been assigned by Lane for refusing to discuss the subject in 1876, namely, the recently acquired knowledge of the Vaughan patent, is shown by the patent itself to be untrue. The patent, as shown by the office stamp, was received by the firm Jauuary 15, 1874 (134)—prior to Locke's departure, and prior to the alleged conversation of 1875. If the knowledge of this patent produced the effect described in 1876, then it is obvious that the alleged conversation of 1875 could not have occurred.

That the alleged conversation is fabricated, appears still more clearly from the diary of Locke himself (39). It there appears in Locke's own statement, of the interview of 1884, that in response to Lane's refusal to accede to his demands, Locke replied, "You appear to have changed your views very much *since I left here in 1874*." Why *1874*, if, as he now testifies, a distinct voluntary agreement to pay was made in *1875?*

The "ordinary laws governing human conduct" would have made the reference 1875 the only natural one; but that this was

not a mere error of dates is shown by the definition "*since I left here*"—that is, when he left the firm's employment—"*in 1874.*"

The alleged conversation with Schnier was upon its face, a mere bit of pleasantry, of no significance whatever, and none was claimed for it at the hearing.

The Court below fell into a second serious error in assuming that "the principal defense was upon the letter of 1873," as matter of written contract.

While by the amended answer it was set up as a defense upon the theory that it broadly related to any inventions, yet upon the opening evidence of Col. Lane, it was strictly limited in its scope, and the letter was used and referred to in the case merely as evidence supporting the claim of the defendant that the valve in dispute was not, as to them or by them, regarded as patentable matter. The real defense then, as now, was that of a license arising upon implied contract based upon the relation of parties and the nature of the transactions.

The Legal Aspect of the Case.

1. The right to use the invention having been expressly and repeatedly conceded by the complainant, Locke, there remains only a legal question of compensation. Upon his own showing the firm entered upon its use by his permission continued down to the date of suit. He claims that even a rate of compensation was agreed upon tentatively. What ground is there for the interposition of a Court of Equity in his behalf?

2. The fact is clearly shown by a careful review of the testimony that the coloring given by Locke is essentially untrue. Every collateral circumstance disproves his claim that he invented the valve independently and before entering upon his engagement with the firm, and disproves in detail his statements so far as they differ from those of Col. Lane and Mr. Thompson.

The facts clearly established, are, that the valve was produced in the drawing-room of the Lane & Bodley Co., and was the outgrowth of the joint experience.

This is found as a fact by the Court below, who says, "After many trials and failures, the construction patented to complainant was hit upon, and it alone was satisfactory" (161).

This, it seems to me, practically settles all the ground-work of fact upon which the rights of the firm arise. The merit of an invention lies in the recognition of given difficulties, and the preception or selection of a principle available as a remedy. It is admitted by Locke that Col. Lane was the directing spirit; and it logically follows upon the facts established that the selection of the principle afterward embodied in the valve in question as a remedy for existing evils, was that of Col. Lane.

The logical result of the testimony, upon the basis of inter-

pretation herein shown, is, that the invention was not the sole and exclusive production of Locke. If, as found by the Court below, "it was hit upon after many trials and failures," and therefore not produced, as alleged by Locke, before entering upon those trials and failures, it logically follows, that, as the trials and failures were those of the firm, the invention growing out of them—if it be invention—was, in a sense, a joint production. The duty of Locke was, as claimed by him, simply to "put in shape" the suggestions furnished him. When this form of valve was finally selected, the duty was simply to apply leather-packing to the Rankine valve. Locke's first production of this valve was a failure; and Col. Lane testifies that he personally made the suggestions that led to success.

The Court below again fell into error in saying, "Locke denies all these statements and testifies that he devised the improvement before the time of his engagement." Locke does not deny the statement of Col. Lane on this point; on the contrary he simply disclaimed knowledge of the pencil marks on "Exhibit 4" (69), and rests upon his claim of prior invention, which the Court practically finds to be a fabrication.

If (as I have before shown we are compelled to do) we adopt the history of the invention shown by Col. Lane and Mr. Thompson, clearly corroborated by the drawings and documents, and found by the Court below, and discard Locke's claim of prior invention, then it is established beyond question that the real point of invention in the entire matter was the suggestion of Col. Lane himself. For it will be presently shown that the only valid claim of the patent is that which embodies a combination, including the throat-piece with its dentate edge. "Exhibit 4" shows *Locke's* result in attempting to utilize the Rankine valve. It is admitted that this was a failure. Up to this point, then, the invention was not complete. In that form it was not an invention, but a mere mechanical adaptation. That which made it an invention was the additional element making the "combination" sustained by the Court below (160). But this additional element was either invented by Locke before his engagement, or by Col. Lane after the failure of "Exhibit 4." There is no middle course. The Court below found,—and the testimony clearly compels the finding—that Locke *did not* invent before his engagement. It consequently follows that Col. Lane *did* supply the "missing link."

The patent, it will be found, embodies but three claims. A careful perusal of the first and third will show that they are invalid in view of the Rankine valve, which shows every element claimed therein.

Moreover, the explanation given of his invention by Locke himself (11, 13), clearly demonstrates this; and the acknowledged failure of "Exhibit No. 4," shows that the first claim cannot be aided by construction, for the reason that the "tubular prolongation, J" is an essential adjunct to the device as he con-

structs it, and, if read into the claim, it becomes identical with "claim 3."

"Claim 3" is so obviously invalidated by the Rankine device, no further remark is deemed necessary. Locke, indeed, first claimed that the Rankine valve was not a "balanced valve" (33), but upon cross examination admits that it does exhibit a balanced valve (84, 85), which virtually destroys his third claim.

"Claim 2" then embodies the only patentable invention and alone corresponds with the finding of the Court below; and, upon the testimony, the suggestion of this claim originated with Col. Lane.

The License or Shop Right.

Even if these facts do not suffice, technically, to establish the right of Col. Lane as a joint inventor, they certainly show that the firm contributed the entire ground-work upon which the invention rested. Theirs was the field in which Locke sowed his crop. Theirs was the occasion, the expense, and the efforts, "step by step," out of which the invention grew. The boy who "boosts" and thereby enables the other boy to reach the apples is fairly entitled to a share in the result.

Locke was a skilled engineer employed with reference to this particular work upon his own solicitation, and upon his own representations of ability "to be of advantage to them in this class of work" (93).

This Court has said: (*Atlantic Works* v. *Brady*)

"The process of development in manufactures creates a "constant demand for new appliances which the skill of ordin- "ary head workmen and engineers is generally adequate to de- "vise, and which are indeed, that natural and proper outgrowth "of such development. Each step forward prepares the way for "the next.

"To grant to a single party a monoply of every slight advance "made, except where the exercise of invention somewhat above "the ordinary mechanical or engineering skill is distinctly "shown, is unjust in principle, and injurious in its consequences. "It embarrasses the honest pursuit of business with fears and "apprehensions of concealed liens, and unknown liabilities to "law suits and vexatious accounting for profits made in good "faith."

What is the legal relation and duty of an engineer under such circumstances of employment? The common custom and understanding is shown by Mr. Thompson (125). In corroboration I refer by way of argument to a paper recently published by a distinguished engineer in *Engineering News*, Jan. 26, 1893.

The paper was read by Mr. Whinery before the Engineer's Club of Cincinnati, upon the occasion of retiring from the presidency on Dec. 15, 1893. In a most thoughtful and masterly presentation of the duties and obligations of an engineer to the profession and the public, he says:

"When an engineer undertakes to do certain work for a client "or an employer, it is obviously his duty to devote himself to the "interest of that client with conscientious zeal and fidelity. His "personal interests or affairs cannot be allowed to stand in the "way of loyal devotion to the interests of his client. The only "exception to this rule is where the demands or interests of the "client conflict with the engineer's sense of right and wrong. "In the practice of law even this sense is not allowed by many "able lawyers, who assert that the attorney is justified in any ac-"tion, be it right or wrong, which will serve the interests of his "client. Even as high an authority as Lord Broughan has said: "'An advocate in the discharge of his duty knows but one per-"'son in all the world, and that person is his client. To save "'that client by all means and expedients, and at all hazards "'and costs to other persons, and among them to himself, is his "'first and only duty. And in performing this duty he must "'not regard the alarm, the torments and the destruction he "'may bring upon others. Separating the duty of a patriot from "'that of an advocate he must go on, reckless of consequences, "'though it should be his unhappy lot to involve his country in "'confusion.'

* * * * * * * * * * *

"The law clearly recognizes that an invention is the property "of an inventor, but the rule is subject to some modifications, "among which the most important seems to be, that if the inven-"tor shall have made and perfected his discovery while in the "employ of another person, and if the invention relates to the "work upon which he is employed, the employer may use it in "his business, but he has no further proprietary right in it. The "application of this rule to the inventions of engineers would "require that if the inventor be at the time in the service of a "client or employer, engaged in solving a particular engineering "problem, and if his invention relates to the solution of that "problem, the client or employer is entitled to the use of the "invention for the purpose in hand, but the inventor may pro-"tect his invention by patent, and require compensation for its "use by other persons."

Upon these facts what standing has Locke in a court of equity? He comes in with a patent obtained under circumstances of grave suspicion; for the testimony of the drawing-room sketches, the tell-tale "dash pot," and the Rankine book, show clearly that the valve didn't "jes' grow," like Topsy, but had a natural and legitimate origin in the old Rankine valve, and a natural

growth, involving only such mechanical modifications as the experiments of the firm and their experience with muddy water suggested; and that the adopted changes emanated, in part at least, from Col. Lane.

Locke was employed at his own solicitation, and upon representations of his ability to embody those experiences in improved forms of mechanism for the exclusive use and benefit of the firm. Yet the claim he now asserts is based upon evidence that would show at the very outset bad faith, in this: *that in the very act of such solicitation and representation he was filing a secret mortgage upon the talent he engaged to sell to them clear and free of all incumbrances*, a mortgage to himself covering the identical thing he engaged to assist them in producing. He then stood by, consenting and aiding them in building up a business on it, *still concealing his secret claim;* waited twelve years in silent acquiescence, all the time receiving benefits at their hands on account of it; and finally unmasks his battery, loaded with his secret mortgage, as a basis of an adverse claim against them totally inconsistent with all the inferences from his conduct. More than this, he now admits that for eight years he has cherished the desire and intention to do this thing, *deterred from its execution only by the selfish reluctance to disturb* these "amicable" (profitable) relations, which, on defendants' side, show cordial good faith, but on his—"let us not speak of it, but look and pass."

Could any claim bear less equity on its face than this? Could any claimant appeal to a court of equity with hands less clean? Could there be less of the element of "good conscience" exhibited in any course of conduct, viewed in the light of the present claim? The following cases upon general equity doctrines are conclusive upon this point:

"When one by words or conduct willfully causes another to "believe the existence of a state of things, and induces him to "act on that belief so as to alter his own previous position, the "former is precluded from averring a different state of things as "existing at the same time."

Broom's Legal Maxims, pp. 221, 222.
Baron Parke in *Freeman* v. *Cook*, 2 Wels. H. & G. 653.

"Conduct by negligence or omission, where there is a duty "cast upon a person by the usage of trade or otherwise to dis-"close the truth, amounts to a contract or license."

6 H. of L. Cases 656.

"Estoppel from wrongful silence may rise against the asser-"tion of a right known to exist by the party alleging it, as well "as where the right is concealed from the other party; a tacit "agreement to forego a right known to both parties to exist,

"having the same effect as a non-disclosure of a right not known "by one of them to exist."

Bigelow on Estoppel, 3rd ed. pp. 524, 529 n. 546.
Cornish v. *Abington*, 4 Hurl. & Nor. 549.

1. If the patent is valid, *the defendants have an indefeasible license.*

Whatever rights to the device accrued under the patent laws to Locke, they could not be exclusive as to the defendant. Having invented or perfected the valve while in their employ and by their aid, and permitted them to incur all the expense and risks attending its production and introduction and use; and to use it for nearly twelve years, with his full knowledge and acquiescence, without any objection or claim, yet participating in the general benefit through his employment and salary, he connot, upon obtaining a patent *ex parte*, gainsay the rights acquired by the defendant.

His words, conduct, and omissions to act, were tantamount to a declaration that the device was not patentable, or if patentable that he had granted the defendants an indefeasible right therein to continue the use of the invention in their business as they had begun.

(*a.*) *The general principle* involved is thus laid down:

"Where one by words or conduct willfully causes another to "believe the existence of a state of things, and induces him to "act on that belief so as to alter his own previous position, the "former is precluded from averring a different state of things as "existing at the same time."

Baron Parke in *Freeman* v. *Cooke*, 2 Wels. H. & G., 653.
Broom's Legal Maxims, pp. 221, 222.

"Conduct by negligence or omission, when there is a duty cast "upon a person by the usage of trade or otherwise to disclose "the truth, amounts to a contract or license."

6 H. & L. Cases, 656.

(*b.*) *Locke's estoppel by silence:*

Not only was Locke silent at the time the valve was adopted in the business, but continued so for twelve years thereafter, and for eight years after he had procured his patent; so as to lead the Company to "suppose that Locke took the same view of the matter that they did," *i. e.*, conceded their right to use the invention.

"Estoppel from wrongful silence may arise against the asser-"tion of a right known to exist by the party alleging it, as well

"as where the right is concealed from the other party; a tacit "agreement to forego a right known to both parties to exist, "having the same effect as the non-disclosure of a right not "known by one of them to exist."

Bigelow on Estoppel, 3d Ed. pp. 504, 529 n.

"Thus if the owner of an estate stand by and see, or in any "way induce another to expend money upon it in reliance upon "a claim in derogation of the owner's right, without which such "expenditure would be useless; and, knowing what is going on "is in prejudice of his rights, does not interpose to prevent the "work, he will not be permitted to interrupt the enjoyment of "such claim."

Bigelow on Estoppel, p. 504, citing *Hagar* v. *Burlington*, 42 Iowa 661.

The general doctrine is very fully stated and upheld by this Court in—

Leather Manufacturers' Bank v. *Morgan*, 6 Sup. Ct. Rep. 661.

(*c.*) *The license irrevocable.*

The defendants not only incurred all the expense and risks of experimenting and introducing to the public, keeping the plaintiff employed under salary out of the proceeds of the business, and increasing it during the period of service, thus constituting a valuable consideration for the right, but have introduced the invention to the public at their own expense, and built up a business upon it, identifying the valve with their business, so that it would cause irreparable injury to disturb the existing conditions.

"If any person by course of conduct, or by actual expressions, "so conduct himself that another may reasonably infer the ex- "istence of an agreement or license, whether the party intends "that he should do so or not, the party using that language, or "who has so conducted himself, cannot afterwards gainsay the "reasonable inference to be drawn from his words or conduct."

Cornish v. *Abington*, 4 Hurl & Nor. 549.
Cited and approved *Bigelow on Estoppel*, 546.

"The machines were sold and distributed as defendants' ma- "chines. Whatever degree of popular favor might be secured "from their peculiar structure and operation, it was obvious that "this was the inducing motive to enter into the contract. When "they had been introduced into general use by the defendants' "efforts, were known as its machinery, and a growing market "for them had been established, it is a fair inference that the "parties intended that the advantage thus gained by the defend-

"ant should not be lost when the number of machines contem-
"plated by the written contract should be supplied."

Chabot v. *Am. Buttonhole M. Co.*, 6 Fish. 73.

"If a person employed in the manufactory of another, while
"receiving wages, makes experiments at the expense and in
"the manufactory of his employer, has his wages increased in
"consequence of the useful result of his experiments, makes
"the article invented, and permits his employer to use it, no
"compensation for its use being paid or demanded, and then
"obtains a patent, these facts will justify the presumption of a
"license to use the invention."

McClurg v. *Kingsland*, 1 Whitman 322.
Solomons v. *United States*, 11 Sup. Ct. Rep. 88 (137 U. S.).
McGowan v. *N. E. Glass Co.*, 3 B. & A. 114.
Barry v. *Crane*, 22 Fed. Rep. 396.
Continental Windmill v. *Empire Co.*, 8 Blatch. 205.
Slemmer's Appeal, 58 Penn. St. 155.
Whiting v. *Graves*, 13 O. G. 455.
Wilkens v *Spafford*, 13 O. G. 675.
Wooster v. *Seidenberg*, 2 Bann. & A. 39.
Black v. *Hubbard*, 3 Bann. & A. 39.

2. Did the rights thus clearly vested in the Lane & Bodley firm survive to the Lane & Bodley Company?

It clearly appears that the Company was organized upon exactly the same basis as the firm. Mr. Bodley and Mr. Britt having deceased, it was determined in 1876 to incorporate, and an agreement made between the surviving partners and the representatives of the decedents, whereby the Company was formed "to carry on and operate the business of the said firm." (91)

The agreement specifically provides:

"That the business of said Company shall be the same as that carried on and operated by the said firm of Lane & Bodley, and be carried on in the same premises as those occupied by said firm; and that the entire property and assets of the said firm of Lane & Bodley shall be transferred and conveyed to said Company upon its incorporation; said Company to assume the entire liabilities and obligations of the said firm of Lane & Bodley," —with other provisions of like character.

Said agreement was in all respects carried out (92), and the business continued in the same locality down to date of suit.

Locke specifically refers twice in his testimony to the Lane & Bodley Company as *successors* to the firm (39, 83).

The following cases govern:

In *Dorsey Rake Co.* v. *Bradley Mfg. Co.*, I. B. & A. 330, it is held:

"It is claimed that the license to which C. C. Bradley & Son "were entitled, was personal to them and could not be assigned, "and therefore the defendant (a corporation, The Bradley Mfg. "Co.) has no right whatever either at law or equity to make or "sell the patented invention anywhere. Whether a license is "or is not assignable, is to be determined, not merely by the "term 'license,' but by an inquiry into the fair meaning and "intention of the parties, and it may be affected not only by "the words of the license, but by the nature of the transaction, "the consideration, and other circumstances, showing that an "assignable right was conferred."

So also in *Hammond* v. *Mason & Hamlin Co.*, 99 U. S. 724, it is held:

"The non-assignability of a license may be waived if the pat- "entee ratifies the transfer of the license by otherwise treating "the assignee as the licensee was entitled to be treated."

Again, in *Montross* v. *Mabie*, 30 Fed. Rep. 234, it is said:

"The extent of an implied license may be construed accord- "ing to the presumed intent of parties as inferred from all the "circumstances."

In *Lightner* v. *Boston & Albany R.R.*, 1 Lowell 338, it is held that a license though not usually transferable, is transmissible by succession to a corporation formed by the union of two licensees succeeding to the obligations of both ("because the consolidated company is the 'successor' rather than the 'assignee' of those companies").

In *Belding* v. *Turner*, 4 Fisher 446, it is held that—

"Withdrawal or addition of parties to a firm, operating under "a license, does not extinguish the license, so long as the busi- "ness is conducted under the same firm name, unless the license "is limited to the identical persons of which the firm is at the "time composed."

Atcheson, J., citing *Slemmer's Appeal*, says:

"The subject matter of the patent in Slemmer's appeal was a "process, which, if legally the invention of one partner, was in "fact the result of partnership labor, experiment, and develop- "ment; and the dealings of the partners with each other had "been such, that it would have been grossly inequitable to deny "to any of them the right to use the invention."

Keller v. *Stolzenbach*, 20 Fed. Rep. 49.

In the case of *Hapgood* v. *Hewitt*, 37 O. G. 1247, the Supreme Court had before it the following facts, differing radically, as will be obvious, from those of the case at bar: A corporation employed an inventor, who, while in such employ, invented a plow upon which a patent was granted to him. Having acquired a license growing out of the circumstances of the employment, the company was afterwards *dissolved*, all its assets passing into the hands of a Receiver in liquidation. Subsequently a new corporation was formed *under the laws of another State*, to which new corporation were transferred, by assignment of the Receiver, certain assets of the old corporation, which, as was claimed, included the aforesaid license; in this case the Supreme Court held, that such assignment did not carry the license in question.

This case presented the bald question of the assignability of a naked license, and nothing more. There was obviously no legal privity whatever between the two corporations. The first died a legal death, and all personal rights with it. The case presents no analogy to the case at bar, for here not only was the Lane & Bodley corporation, a mere instrument or organization used by the parties composing the firm for convenience in carrying on the business in the same manner, under the same obligations and circumstances, and to the same extent as before, but the license in question was based upon facts and transactions begun by the firm and continued by the corporation in unbroken succession up to suit. Therefore the acts and circumstances constituting the consideration of the license in question were, in the eye of the law, continuing acts and circumstances,—continued in unbroken series, participated in and ratified by the acts of Locke himself up to the date of suit.

The evidence clearly shows a state of fact where even the silence of Locke creates an estoppel. His acts up to the grant of his patent were such as to lead Lane & Bodley to believe that no right existed. His silence after the grant was a tacit agreement to forego the right; nay, more, it was a virtual concession that no right existed as against the Lane & Bodley Co.

Bigelow on Estoppel, pp. 504, 529 n. 3d Ed.

Much of the commercial value of the invention was due to the Lane & Bodley Co. Their business gave the motive and opportunity for its production, and their large trade gave an immense impetus to its introduction. Their manufacturing facilities and the opportunities afforded by their trade enabled them to place it upon the market at the outset, in operative condition, and to speedily ascertain and remedy any latent defects. Moreover, their reputation gave assurance to the public that they might adopt the new invention with safety. All these tended at once to carry the invention into successful public use. One has only to look at the universal history of new inventions where the limited opportunities for preliminary trial, and the

limited means of the inventor, bring them before the public in incomplete and imperfect form, resulting in failures, losses, long delays, and enormous after-difficulties arising from the unfortunate impressions created in the public mind by these failures. All this was avoided by the efforts of Lane & Bodley Co., and Locke has received the benefit, and they constitute the license an irrevocable one.

"Though license is not transferable, yet the existence of a "license to the assignee may be shown by proof that the owner "recognized and dealt with him as a licensee."

Holmes v. *Burglar Alarm & Telegraph Co.*, 42 Fed. Rep. 220.

It is proved and admitted that Locke made visits of from one to three weeks to Cincinnati annually, from 1874 to 1884; had the free "run" of the drawing room and shop of Lane & Bodley Co. at such times, where the work of building elevators and valves constantly went on; was in constant correspondence with the Company; during the last four years was in their employ; on one or more occasions purchased elevators from them for others, and "*believed*" they were building the valve all the time (86). Yet Locke admits he interposed no objection, either verbally when present or in correspondence when absent (87).

There is not the slightest pretense that he was ignorant of the organization of the Lane & Bodley Company. On the contrary the proof is wholly against such supposition.

The successorship of the company is voluntarily referred to as a fact beyond controversy; and moreover he assigns as a reason for his admitted silence down to 1884, that he "regarded the verbal agreement of 1875 as fully protecting his rights"—but it was the *firm* and not the *company* that was a party to the alleged agreement. Thus it is most clearly shown that the non-survival of the license was not contemplated by the parties in interest.

There was a further point of defense brought to the attention of the Court below, which should have received attention, namely; that of laches on the part of the complainant. As this has application only upon the theory of the general correctness of the decision below, it will be of no significance if our present contention is sustained, and that decision reversed.

It is a fundamental proposition that Courts of Equity will not give relief to parties who have voluntarily "slept upon their rights." "Nothing," said Lord Camden (4 Bro. Ch. Rep. 640), "can call forth this Court into activity but conscience, good "faith and reasonable diligence."

In this case, it is admitted that the valve was in use by defendants at and before the issue of the patent in 1876; that no objections were ever made at any time by Locke until bringing this suit in 1884; that he "believed" (and it is indisputably

proved that he had every reason not only to "believe," but to *know*) that the L. & B. Co. were constantly making and selling the valve during all that period.

In *Piatt* v. *Vattier*, 9 Peters 405, it is held that if a complainant in equity desires to prove extenuating ground for delay, he must set it up in his Bill.

In *The Walter M. Fleming*, 9 Peters 474, a failure to bring action in seven years after a default, with knowledge and without objection meantime, was held fatal.

See also—

Wagner v. *Baird*, Howard 234.
Badger v. *Badger*, 2 Wallace 87.
Brown v. *Buena Vista Co.*, 95 U. S. 157.
Gordon v. *Kinnell*, 99 U. S. 201.

In conclusion, I can only repeat that the equities of the case in every aspect seem to me to be wholly with the appellants.

A patent, taken under the circumstances of this one, is in derogation of the common law rights of others engaged in a common cause with the inventor. It manifestly is not an independent creation of genius. The very elements of the invention, namely, the opportunities, tentative efforts, failures and successes, were its roots, and the essential basis of its growth. All the surrounding circumstances fix its character as a natural out-growth of experience with strictly local conditions, and show it to be a mere adaptation of a pre-existing structure, created for a similar purpose, to the special conditions under which it was to be used.

Would it not be absurd to draw an arbitrary line between engineering skill and invention in measuring the duty of a skilled employe who accepts an employment whose sole aim is to accomplish the thing finally done?

Atlantic Works v. *Brady*,

I have at the outset adverted to the errors of the Court below in its decree. It is not necessary here to repeat them. It seems to me obvious that, under any circumstances, the decree must be substantially modified, if it is not to be reversed. It is contrary to elemental principles to decree more than actual profits upon any theory of benefit to other portions of a defendant's business. It is equally contrary to established doctrines to award profits for the whole structure where the invention is but for an improvement. Two out of the three claims of the patent have been shown to be void by anticipation, as being too broad, in view of the Rankine valve. The remaining claim, if it involves invention beyond mechanical skill, covers but a specific improvement, namely, the addition of packing to a valve; fitting a structure, perfect for ordinary conditions, to answer special and local conditions.

This Court has repeatedly declared in such cases that the law of recovery requires the complainant to apportion the profit, otherwise only nominal damages can be recovered.

In this case there is not a syllable of testimony upon which an apportionment can be made.

Garretson v. *Clark*, 111 U. S. 120,
Black v. *Thorne*, 111 U. S. 124.

The case is respectfully submitted to the enlightened judgment of the Court.

LEWIS M. HOSEA,
For Appellants.

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Supreme Court of the United States.

OCTOBER TERM, 1893.

No. 52.

The Lane & Bodley Company,
Appellant,

vs.

Joseph M. Locke.

Appeal from the Circuit Court of the United States for the Southern District of Ohio.

BRIEF FOR JOSEPH M. LOCKE.

THOMAS A. LOGAN,
For Joseph M. Locke.

NOTE.

The printed record does not show the testimony in the order in which it was taken, but the following chronological statement will enable the court to read it consecutively as it was given:

1. J. M. Locke, opening deposition for complainant, June 16, 1885, Rec., p. 11.

2. P. P. Lane, opening deposition for defendant, January 15, 1886, Rec., p. 92.

3. J. B. Stanwood, opening deposition for defendant, January 16, 1886, Rec., p. 104.

4. Chas. F. Thompson, opening deposition for defendant, January 25, 1886, Rec., p. 121.

5. J. M. Locke, second deposition for complainant, February 18, 1886, Rec., p. 24.

6. Theo. McGowan, deposition for complainant, February 18, 1886, Rec., p. 88.

7. Chas. F. Thompson, deposition for defendant, May 3, 1886, Rec., p. 131.

8. P. P. Lane, deposition for defendant, May 4, 1886, Rec., p. 150.

9. J. M. Locke, third deposition for complainant, May 7, 1886, Rec., p. 17.

10. Anthony Schneir, deposition for complainant, May 14, 1886, Rec., p. 22.

An adjournment is improperly noted on page 88.

For greater facility the complainant has had index slips prepared and attached, which give a ready reference to the whole record.

Robert Clarke & Co., Printers.] [*October, 1893.*

Supreme Court of the United States.

OCTOBER TERM, 1893.

The Lane & Bodley Company,

Appellant,

vs.

Joseph M. Locke.

Appeal from the Circuit Court of the United States for the Southern District of Ohio.

BRIEF FOR JOSEPH M. LOCKE.

ARGUMENT.

The complainant says he is the original inventor of the device for which the letters patent in suit were issued to him, and that he is entitled to recover damages from the defendant for infringement for a long admitted use of it.

The defendant denies that the complainant is the inventor of the device, and denies that there is patentable novelty in it. Several other defenses are made in the answer, but the court below found, "there is nothing in them," and it is now proposed to show that there is nothing in these:

The controversy is really confined to the two points stated, and the determination of these points involves the question of the greater accuracy of the memory of the

complainant or the defendant. There are no witnesses upon either side, who speak directly as to the controlling assertions of the parties. All others were called simply in corroboration of one side or the other.

Therefore, before discussing the merits of the case, it seems to me to be an imperative duty to inform the court as to the personal and professional character of the complainant.

He is the son of a father whose name was a household word in the early history of Cincinnati, and whose extensive reputation in Europe and America as one distinguished in the sciences, added largely to her cognomen of the "Queen City of the West." The son has well sustained the reputation of the father, and might truthfully have much enlarged the following modest description of their acquirements and prominent identity.

"A. 71. My father was well known to have been one of the leading investigators and instructors in the sciences. I had been under his direction from my earliest training; had myself been instructor in the sciences, and for two years had been lecturer on the physical sciences at the Ohio Mechanics' Institute." *Locke, Rec.* 59.

"My occupation had been that of civil engineer and bridge engineer, professor of natural sciences, officer in charge of astronomical instruments and apparatus of the National Observatory; in charge of experimental work of the ordnance department of the navy; study and examination of the applied sciences in Paris, London, and Berlin; charge of telegraph work in its earliest stages; consulting engineer in regard to theory and practicability of various devices; had instructions in mechanical draughting." *Locke, Rec.* 26.

Of his ability to conceive and apply such a device as that in question, there can therefore be no doubt; and that

the defendant was satisfied of his capacity is not denied. *Locke, Rec.* 27, *Ans.* 3.

I shall make no comment upon the aspersions put upon the complainant in the brief of the appellant. The reading of the record will be his completest vindication. In the decision by the court below, where the parties were known to the court, and where their professional and personal standing is matter of local history in the community, not a word appears to suggest, even remotely, that a doubt of his veracity or integrity was for a moment entertained. Upon the contrary, every statement that he made was unqualifiedly adopted by the court, else the present decree could not have been rendered.

Neither shall I make any comment upon the statements in the brief for the appellant, grouped under the head of "General Facts," except to say, that in the manner they are therein set forth, and as to the impressions they seek to convey, their accuracy is not at all conceded, but, on the contrary, is strenuously denied, and by ample quotations from the record will hereafter be absolutely refuted.

One of the most authoritative forms of negativing these statements will be to show how the court below viewed the testimony on which they are based, and this can best be shown by extracts from the opinion. *Rec.* 160.

Sage, J. . . . "The defendant contends:

"(1). That the complainant's patent is invalidated by the description contained in Rankin's Manual of the Steam Engine and Other Prime Movers (5th ed. London, 1870), beginning on page 140, of a mine-pumping engine designed by M. Junker. Reference is also made to page 128 of the same volume for description of cup-packing. . . . Conceding that we have here what would anticipate a claim

for the graduated valve openings shown in the drawings and described in the specification of complainant's patent, we have only to recall that the complainant expressly disclaimed graduated valve openings, either broadly or of any specific form, excepting in combination, as has already been stated; nor does he claim the cup packing, excepting in combination. Upon full consideration the court does not find any description in Rankin anticipating complainant's patented improvement.

"The patents to Dunlap, October 29, 1872, No. 132,526, for improvement in balanced valves, and to Vaughn, September 30, 1873, No. 143,266, for improvement in balanced valves for hydraulic cranes, relied upon by defendant, do not anticipate the complainant's improvement.

"(2). The defendant's second contention is that the complainant's improvement does not display invention; that if any thing more than an aggregation of old elements it is only the product of skill, or as counsel expressed it, the natural outgrowth of experience with local conditions, embodying mere mechanical modifications of existing and well known appliances. The court does not concur in this view. The parts of the combinations claimed were old, but the combination was new, and it produced a new and useful result. The problem was to produce a valve which would obviate the 'water ram,' and relieve against the excessive wear from muddy water. The complainant was, when the improvement covered by the patent in suit was perfected, in the employment, as general designer and draughtsman, of Lane & Bodley, a partnership engaged in the city of Cincinnati in the construction and sale of hydraulic elevators and other machinery. The water ram could be prevented by the use of various devices, as by the use of graduated openings not differing substantially from that described by Rankin in the work already referred to, or by a disk valve, described in the testimony. The great difficulty was to overcome the wear and tear of the packing by the gritty particles in the water whenever it became muddy by reason of a rise in the Ohio river, the source of the city supply. After many trials and failures,

the construction patented to complainant was hit upon, and it and it alone was satisfactory; and it was satisfactory because of a new and, therefore, unknown combination, which was an invention."

"The evidence does not sustain the claim that the invention was not the sole production of the complainant, but the joint production of himself and P. P. Lane, senior member of the firm of Lane & Bodley. The burden of proof is upon the defendant. Lane testifies that the notches --- referred to in the specifications, also as 'scallops or indentations' --- at the edge of the tubular prolongation, J, were determined upon by his direction; that the indication of the change was made upon the drawing by his instruction, and that he thinks, but is not positive, that he made the marks upon the drawing (*Exhibit* 6) showing the change to be made. Locke denies all these statements and testifies that he devised his improvement before the time of his engagement as draughtsman with Lane & Bodley. Without entering upon the details of the testimony it is sufficient to say that the court finds the fact to be that the invention was made by the complainant."

"Having found that the improvement displays invention, and that it was made by the complainant, the next question is whether the defendant has established that it has either an indefeasible license or shop right or an equitable part ownership of the title. This defense is made principally upon the amended answer filed February 2, 1886, the original answer having been filed June 24, 1885. The original answer set up that the improvement was made by complainant while in the employ of Lane & Bodley, under full salary, and under obligation to give to that firm his time and skill in designing, perfecting and embodying in working drawings, construction and improvements in machinery, etc., in the line of their manufactures, and that it was carried into public use by them with the full knowledge of complainant, and without his objection or claim that it was patentable. The amended answer sets up that it was understood and agreed, as part of his contract of employment, that during its continuance any and all im-

provements made by complainant, and deemed by said firm patentable should be assigned to said firm and complainant jointly, and that said firm should have the right or option of the exclusive title and ownership of such patents as might be taken upon such invention at a price to be agreed upon or fixed by arbitration, and that complainant acquiesced in the use of said improvement without claiming that it was patentable, or that they were not entitled to its free use; also that complainant, while in their employment, took no steps toward securing letters patent therefor, nor for some time afterward, and that his application was not filed until more than three months had elapsed after said employment had terminated. The complainant's application for a patent was within two years after his improvement was perfected. The evidence does not establish that he abandoned his invention. The agreement and understanding averred in the amended answer is not made out by the evidence. Lane himself, as a witness, admits that there was no such agreement. It is sought to reach the same result by evidence tending to prove a custom by virtue whereof draughtsmen and designers recognize the right of their employers to the products of their invention. But nothing of the sort is pleaded, and if it had been, it is not proven. Moreover, admitting the agreement to have been made, or the custom to have been proven, what has either to do with this suit? The firm of Lane & Bodley was dissolved in 1876 by the death of two of its members. The survivors organized the defendant corporation, and this suit is against that corporation, which is entitled to none of the rights claimed of Lane & Bodley. The fact which appears in the record that the surviving members of the firm of Lane & Bodley, at the date of the incorporation of the defendant company, held all of the shares of its stock excepting thirty reserved for sale to its employes, did not identify the corporation with the firm, nor did the assignment by the surviving partners of all the property and assets of the firm to the corporation operate to confer upon the corporation any right to use the complainant's improvement."

"But it is said that the complainant's suit must fail, and the complainant be remitted to whatever rights he may have at law, by reason of his laches in pursuing his equitable remedy, the estoppel by conduct constituting a waiver of his equitable rights. These propositions are based upon evidence tending to prove that, although complainant knew that the defendant was making, using and selling his improvement, he made no objection, set up no claim, made no demand for royalties, but was silent and acquiesced until 1884. It is not necessary to consider the evidence, which is conflicting, in reference to the complainant's silence and acquiescence. In any light in which it may be viewed it is insufficient upon this whole case, inasmuch as the patent and the complainant's title to it are sustained. *Hapgood* v. *Hewitt*, 119 U. S. 226, disposes of all the other defenses. There is nothing in them." *Rec.* 162.

It will be seen that if this opinion is right the "General Facts" must be wrong.

History of the Invention,

The brief for appellant states concisely what is the real defense now relied upon:

"*The real defense, then as now, was that of a license arising upon implied contract based upon the relation of the parties and the nature of the transactions.*" *Appellant's Brief, p.* 12.

What were the relations of the parties to this invention, and what was the nature of their transactions as to it? The answer may be made as follows:

Prior to 1871 the modern passenger elevator, as it now exists, was not known in this country or in Europe. There were "lifts," so called, in use in Europe, but they were not adapted to use here for such purpose. There were

"hoisters" in many forms, there and here, simply to lift heavy weights—freight-lifters they might be called—but they were not designed for, or capable of, passenger service with its requisites, which are succinctly stated by Locke, as follows:

"A. 5. The requisites for a valve or regulator are: *First.* Without skill, the operator at his will may open the valve with proper graduating effect, so as to secure gradually accelerated motion to the platform up to the point of its full speed. *Second.* That he—the operator—without skill, will close the valve, insuring a gradual cutting off of the supply, thus preventing water-ram in the pipes, which is liable to start the joints, if not burst said pipes, and give an abrupt jolt to the platform; but, when the closing is gradual, the platform comes to rest by a uniformly retarded movement. *Third.* Ability to retain the platform at a state of rest at any desired position. *Fourth.* The ability to arrest the retardation or acceleration at any point, and retain the speed at about that of the time of arresting. *Fifth.* A simplicity of motion that can readily be transmitted from the platform or any staging or story on the line of travel of the platform. *Sixth.* A latitude in amount of motion to accomplish the foregoing operations so as not to require nicety of manipulation. *Seventh.* Durability. *Eighth.* To admit of ready repair for the natural wear of parts. *Ninth.* Balancing of parts so as to require little force in the adjustment of the valve or regulator to the operation required of it. *Tenth.* Arrangement so that variations of pressure of the supply, or back pressure, or ratio one to the other, shall not disturb the balancing of the valve." *Locke, Rec.* 30, *Ans.* 5.

Lane confirms this fully. *Lane, Rec.* 103, *Ans.* 46.

These results could only be obtained by the use of a valve capable of permitting such operations to be performed.

There was no such valve in existence at the time, but

the necessity for such an one was brought to the attention of Locke in the following manner:

A. 1. Through Mr. Harvey Tilden I learned "that the firm of Lane & Bodley were desirous of securing the services of a draughtsman, and he had suggested myself for that position, and recommended me to call on them. Prior to so doing Mr. Tilden took me to see an hydraulic hoister being constructed at that time by Messrs. Lane & Bodley at Bare, Shinkle & Howell's, south side of Second street, between Walnut and Main, Cincinnati. I at once recognized the fact that the future outcome of that style of machinery would be large, and having about completed the work in hand, I devoted considerable time, thought, and investigation to the matter. Shortly after this visit to Bare, Shinkle & Howell's, I called on Colonel Lane in relation to employment as draughtsman. Several interviews took place, and on one or more occasions I accompanied Colonel Lane to visit the hydraulic hoister then in course of erection. During one of these visits I stated that, in my judgment, the merit and value, commercially, of hydraulic hoisters would rest in the perfection of the valve, or, more properly, regulator, and laid down what, in my judgment, were the requisite qualities of such a regulator. *At this time—that is, during these various interviews with Colonel Lane—I was working upon the solution of the problem of the construction of a regulator possessing the qualities I deemed desirable and necessary, and solved the problem, as subsequently carried out in the patent under discussion.*" (Italicized by counsel.) *Locke, Rec.* 25, *Ans.* 1.

"Ans. 7. *Having settled these points in my mind, I proceeded to devise a valve or regulator that would fulfill the required conditions, and devised the one for which I subsequently obtained letters patent, being the one now under discussion. This all preceded my engagement as draughtsman with the firm of Lane & Bodley.*" (Italicized by counsel.) *Locke, Rec.* 31, *Ans.* 7.

Locke embodied his invention in a series of sketches,

made by him at his home, and, in order to indicate his ownership, marked the subsequent drawings of them with a padlock, which was a sign manual long used in his family. *Locke, Rec.* 65, *A.* 101.

Locke was employed by Lane & Bodley in the fall of 1871. He can not remember the date, but thinks it was in October. Mr. Thompson, the bookkeeper of Lane & Bodley, fixes it about November 20th. Immediately upon entering their employment, he was set to work to make a valve for the firm which would answer their purpose, and several forms were tried and many experiments made, but all failed. In cross-examination he was much pressed to know why, if he had previously invented a satisfactory valve of his own, he did not offer it to his employers, instead of continuing experiments for them, which he says he knew in advance would prove unsatisfactory.

The distinction between having invented a device of his own, which he held by proprietary right as private property, without reference to Lane & Bodley, or their employment upon the one hand, and of giving them his time and abilities to make another device for them, according to their ideas, and under their direction as their employe upon the other hand, had not, it seemed, become apparent to the examining counsel. Locke, however, had already stated more than once in chief that he had informed Lane of his invention, and that the sketches of it were at home. He had already stated, too, that he had become satisfied Lane did not want to adopt any valve unless the firm controlled it, and that Lane considered it the main inducement for Locke's employment that Locke should make a valve which the firm would control. This is fully set forth by Locke.

"It was neither my place nor my duty to insist upon

plans of my own, especially as they seemed to be neither sought nor cared for, and I was impressed with the idea that Colonel Lane realized that the essential feature rested in the regulator, and that Lane & Bodley were anxious to have one of their own which they could entirely control." *Locke, Rec.* 63, *X-A.* 89.

And again:

"*X-A.* 108. At that time, I believed, and have ever since, that Lane & Bodley desired to have a regulator entirely their own; and as I had previously stated that I had a plan of my own which would fulfill the conditions, and it was not asked for, I did the next best thing, in my judgment, by the suggestions made." *Also X-Ans.* 109, 110, *Locke, Rec.* 67; *X-Ans.* 119, *Rec.* 69.

This point having been cleared up, we can turn again to Locke in his employment; and by following him there, step by step, we can see what efforts were made, through him, by Lane, to get a valve which would answer the purpose, and which would belong to the firm.

The first valve he was directed to make was a disk valve. This was a favorite style of valve with Lane. He had used some forms of it previously in his business, and was pleased with it, and designed one for the occasion, which he insisted should be adopted. It may be that he had another motive in adopting it. If it was a success, the entire credit, as well as profit, would be his, not Locke's. Accordingly it was tried against Locke's protest, and was a failure. Beside other defects, it was found that the friction of the disks wore the surfaces unequally, and the muddy water of the Ohio river, with its grit and sediment, clogged it. So that form of valve had to be abandoned. Locke says:

"The first plan for valve or regulator, subsequent to the before-mentioned globe and gate valve experiment, was a disk valve, which I understood from Colonel Lane to be one of his designing. The first step I took was to calculate the friction under conditions likely to occur at the Bare, Shinkle & Howell elevator. The results were, July 18, 1884, a matter of record in the drawing-room of the Lane & Bodley Company. That satisfied me at the time of its impracticability, on account of excessive friction. I further objected to the device from the ground that two disks, of which one revolved upon the other, or worse, partially revolved, would grind each disk into convex form, resulting into leakage of the valve. My objections were overruled, and several valves made in succession, with efforts to overcome defects." *Locke, Rec.* 27, *Ans.* 4.

Lane concurs in this statement in every particular. *Lane, Rec.* 94.

And states why he favored the disk valve, which only becomes important as showing that he did not favor the Locke form, and certainly took no part in its adoption. *Lane, Rec.* 96, *Ans.* 15.

But Chas. F. Thompson, the son-in-law of Mr. Lane, secretary of the company, and really the principal witness for the defense, the vehement character of whose evidence against the complainant is strongly noticeable, is compelled to sustain Locke as to the disk valve, and to dissent from the sanguine belief of his father-in-law regarding it. He says:

"I believe it did work hard, and I am satisfied the valve never would have become popular." *Thompson, Rec.* 128, *Ans.* 12.

Being thus compelled to abandon the idea of the disk

valve, Lane cast about for another instead, and tried a piston valve as a substitute.

"The next valve of which drawings were prepared was a piston valve, consisting of a cylinder surrounded by two water channels, from which there were openings into the main cylinder. . . . These openings were pointed or lozenge shape at their ends." *Locke, Rec.* 28.

A full description of its operation is given by Locke, but it is unnecessary to quote it at length. Two things, however, appear by him. The first is that because of abrasion by the lozenge-shaped openings, the piston was not to have cup packing, *i. e.*, cup shaped disks of leather to make it tight, and the second is, that the water was to pass through lozenge-shaped openings. Locke objected to this, and his objection seems to have had so much weight, that no valve was made, although the drawings were prepared.

"I objected to this form from the fact that the packing would necessarily be subjected to uneven wear on account of the lozenge-shaped openings. I know of no valve having been made from these drawings." *Locke, Rec.* 28.

Another form was then tried. Lane called it a piston valve, Locke calls it a puppet or bonnet valve. This was so well thought of that valves were made, but rejected before being attached to the hoisting apparatus. *Locke, Rec.* 27, *Ans.* 4.

An analytical statement of the radical defects in all these forms is made by Locke. *Locke, Rec.* 30–33, *Ans.* 5, 7.

Despite these failures, experiments still continued to be made under Lane's commands. Apparently he was determined that a valve should be produced which would belong to the firm, and apparently he was as much disinclined as in the beginning to be driven to take the Locke valve.

The subsequent attempts are not so fully specified in the testimony as are the foregoing. There is but the general reference by both parties to the continuous efforts which were made, all of which came to nothing.

An intelligent estimate, however, of these efforts, and of the time, labor and expense attendant upon them, can be made by an inspection of sundry sketches called "Blotters," put in evidence by the defendant for quite a different purpose, which will be discussed hereafter.

So that at last, after all these attempts, the movement for a valve, which should be a Lane & Bodley valve, entirely dissociated from the Locke valve, came to a standstill.

The Lane & Bodley firm, extensive as it was, with all its researches into the state of the art, with all of the inventive ability of Locke as an employee (which, however, was always exercised outside of his own device), with all of Lane's asserted knowledge on the subject of valves, and with, as they aver, the work of Professor Rankine, from which, it is claimed, Locke subsequently copied his device *verbatim*, in their drawing rooms for years preceding Locke's employment, were unable to take another step in the desired direction.

As Locke puts it:

"In conclusion, regarding all this discussion of similarity, invention, non-invention, etc., it is only necessary to call attention to the fact that Lane & Bodley, after the expenditure of time and money, were unable to produce a valve having the requisite properties, as experience has demonstrated mine to possess." *Locke, Rec.* 37, *Ans.* 11.

There was nothing left for it, therefore, but to come to the Locke device; and accordingly Lane asked Locke to bring his sketches to the shop, which he did, and Lane

inspected them, and ordered drawings of them to be made.

"I agreed to bring my sketches from home on the following morning, which I did, and explained them to Colonel Lane, and was instructed to proceed with the drawings." *Locke, Rec.* 67, *A.* 110; *Rec.* 28, *A.* 4; *Rec.* 65, *X-Ans.* 101.

What followed is thus told by Locke:

"Whilst the drawings were being made from these sketches, Colonel Lane objected to the serrated graduating device as now employed and described in my letters patent, stating in his judgment they would be an infringement upon the 'Judson Governor Patent.' Under his directions I removed the serrated graduating device, and depended upon the gradual closing or shortening of the annular space between the valve seat and the valve. This I believed would not be successful, but a drawing, Exhibit No. 4, marked 'Balance Three Way Water Valve,' and dated June 6, 1872, was prepared, and a valve made therefrom. It was placed in position to operate a hoister, and, as I anticipated, was unsatisfactory, producing water-ram in the supply, too sudden arrest of motion for the platform, and an unsatisfactory starting to lower the same.

"Another drawing was prepared, marked by defendant Exhibit No. 5, in which the serrated graduations of my original plan were restored, making it in fact a reproduction of the original sketch, and identical with all the valves subsequently made, as far as I know." . . . *Locke, Rec.* 29.

After Lane's suggestions had been ignored, and the valve restored to its original form, it was a thorough and permanent success. *Locke, Rec.* 31, *Ans.* 5.

This was the completed valve, and as shown in Exhibits 5 and 6, and on page 10 of the *Lane & Bodley catalogue, Exhibit B, Locke's deposition*, was first put in use in

August or September, 1872; from which it appears that for nearly a year Lane & Bodley had been pursuing their experiments before they adopted it.

Since then, it has been constantly made by them, without material alteration.

"It has been used continuously until this day, with only such changes as would cheapen construction and facilitate repair. Most of these changes were made during Mr. Locke's employment." *Chas. F. Thompson, Rec.* 122; *Ans.* 7, 8, 9.

The valve immediately went into general use.

From the statement furnished by the defendants to the special master it is in evidence that two hundred and twenty-one valves had been manufactured by them to the time of the filing of the bill, of which two hundred and eleven had been sold and ten remained on hand. *Rec.* 165, *Master's Report.*

THE ROYALTY.

The relations of the parties, and the circumstances surrounding them up to August or September, 1872, is shown by the foregoing *résumé*. During 1873, Locke occupied his leisure, after duty hours in the Lane & Bodley shop, in making drawings and specifications preparatory to an application for a patent. The occupation and intention was open and visible, and must have been known to Lane and others.

"These drawings, and especially my work in the shop, was a matter of no secrecy, nor its object, and must have been known by many." *Locke, Rec.* 38, *Ans.* 15.

In the beginning of 1874, February 21st, Locke left their employment. *Chas. F. Thompson, Rec.* 122, *Ans.* 3.

Three months after, upon May 27, 1874, he made application for the patent. During the pendency of the application he was residing in Utah as superintendent of silver mining operations, and returned to Cincinnati, March 19, 1875. He went again to Utah, April 12, 1875, having re-engaged with the mining company. *Locke*, *Rec.* 38, *Ans.* 15.

Two days before his departure, viz., upon April 10, 1873, he went to the Lane & Bodley shop.

"Upon April 10, 1875, I called at Lane & Bodley's to pay my respects to Colonel Lane before my departure. As I was about to leave Colonel Lane broached the subject of my pending patent, asking me what royalty on valves I proposed charging them. I replied twenty-five ($25) dollars. Colonel Lane then remarked that would be satisfactory when I got a good patent." *Locke*, *Rec.* 38, *Ans.* 15.

He did get a good patent, which is dated February 15, 1876, and two months after an event occurred which was probably suggestive to the mind of Colonel Lane as bearing on the contract. In April, 1876, two of the members of the firm of Lane & Bodley having previously deceased, the Lane & Bodley Company was incorporated, under terms shown in the *stipulation Rec.* 90, and presumably the new company was not liable for the partnership agreement.

It is in place here to deal with the position assumed by Lane in regard to this conversation, and in regard to his knowledge of Locke's patent, and the intention of Locke to exact a royalty.

Lane denies the statements of Locke in every essential particular. He denies that Locke ever claimed to him that he designed a valve at home. He never heard of such a claim until it was brought out in testimony. He denies any knowledge that Locke ever intended to take out a

patent. He never informed him that he had got a patent, never made any demands for royalty, and the only knowledge he had of the patent was when it was issued from the patent office. The only demand for royalty was a verbal one in their office shortly before the suit. *Lane, Rec.* 154, 156. *Ans.* 20, 23, 25, 26.

This contradiction makes the vital issue of the controversy. If Lane had had the knowledge which he here denies, but had forgotten it when he testified, he can not ask, in view of such forgetfulness, that any reliance shall be placed upon his other statements, which look to Locke's impeachment. And if he had had it at all, it is difficult to understand how he could have forgotten it at any time. And yet the fact was that he did know Locke intended to apply for a patent, and to exact royalty, and had known it for years, because he was told of it by his own partner.

Anthony Schneir was one of the original partners with Lane in the firm of Lane & Bodley, while Locke was employed there as a draughtsman, and when the Lane & Bodley corporation was formed, Schneir became one of its members. His testimony will be found *Rec.* 22, 23. He says:

"A. 5. The only conversation I ever had with a member of our firm was with Colonel P. P. Lane—that is, when I told him of Colonel Locke informing me that he would, some day in the future, take out a patent for that valve, and would "make us boys fork over, and make us pay for the use of it." That is just the way he said it—in a joking way, like he generally talked. That is all that occurred except, I remember, how Colonel Lane answered me, if that is material. Colonel Lane told me that that did not amount to any thing. It was only idle talk on the part of Col. Locke, as he (Locke) could never get out a patent for it. It's so long ago I may not remember all that occurred;

but what I have stated, that much of it I remember distinctly."

"Q. 6. When Colonel Locke told you this, was he still in your employment?"

"A. 6. He was. That conversation of mine with Colonel Locke took place right in our drawing-room."

This conversation must have occurred not later than 1874, when Locke finally left the shop, and the statement to Schneir that Locke never could get a patent evidently inspired the condition in the contract made by Lane, that they were only to pay when he got a "good" patent. To go back to dates: As we have seen, Lane made the contract with Locke for a royalty of $25 upon April 10, 1875. Locke returned to Utah two days after that and remained there more than a year.

"I returned to Cincinnati again, arriving May 10, 1876, remaining in Cincinnati eight days. During the latter part of this period Colonel Lane told me that a Mr. Vaughn had called upon him in regard to a patent valve. The colonel at the time was about starting for Philadelphia, and requested Mr. Thompson to show me the description of said valve in the Patent Office official gazette, as I had no knowledge up to that time of the Vaughn device, and, as I remember, Colonel Lane spoke as though the visit from Mr. Vaughn was the first knowledge he had of the subject. As soon as I could get away I followed Colonel Lane to Philadelphia, and on the evening of May 20, 1876, in Philadelphia, had a talk with Colonel Lane in regard to the valve matter. This conversation was evasive on the part of Colonel Lane, and business discussion declined, as he was recreating with a portion of his family. I left Philadelphia the same night at midnight, and returned to Cincinnati the 2d of June, 1876; remained in Cincinnati until the 6th of the same month, then started on my return to the West, where I remained, with occasional visits to Cincinnati and New York until the summer

of 1884. I then was enabled to devote some time to the matter relating to the valve patent. *Locke, Rec.* 39.

Upon August 28, 1884, he again called on Lane. The contract for the royalty had never yet been formally denied, although Lane by his conduct had shown an evident disposition to ignore it. Notwithstanding which, however, it was still a subsisting contract between them. The entry in Locke's diary, August 28, 1884, Complainant's Exhibit No. 3, recites the interview.

"Called on Colonel Lane; told him I would like to arrange about the old matter of the valve." Lane—"What valve?" J. M. L.—"The hydraulic valve." Lane, in a bulldozing manner throughout—"You have no rights; nothing new in it any how; you were in our employ; large sums were expended in experiments; I won't discuss it." J. M. L.—"You appear to have changed your views very much since I left here in 1874." Lane—"Yes, I know more than I did then." I then arose from my chair to go, standing, I said—"I see no need of a bulldozing manner. Do you wish me to understand you to decline to discuss the matter at all." Lane—"Yes, I do." "I then left."

"About August 30, 1884, I wrote a letter to the Lane & Bodley Company, severing my connections with them, which letter is attached to the deposition of Mr. Thompson." *Locke, Rec.* 39.

Upon November 26, 1884, the bill of complaint was filed.

THE DEFENSES.

Upon this recital of the evidence, the complainant confidently claims that there is nothing whatever in the relation of the parties or the circumstances surrounding them, upon which any rights in the patented improvement of the complainant, enured to the defendant.

But it is urged strenuously that the complainant's conduct has created an equitable estoppel; that he continued in their employment in Utah after leaving it in Cincinnati; that he failed to assert his claims and his silence was misleading.

What are the facts?

First, as to the employment, Locke says:

"The various services rendered Lane & Bodley after 1874 and to 1880, were without remuneration, or contract for any, and were mainly in the form of courtesies and without any expectation of monetary return; some of the transactions were based upon mutual benefits. In 1880, arrangements were entered into between the Lane & Bodley Company and myself, in which I was to give them my time, or portions thereof, at the rate of $200 per month and expenses, and an allowance of $20 per month for their portion of the use of my office in Salt Lake City, for the purpose of a branch office of the Lane & Bodley Company, they having the right of desk room for any other representative of themselves than myself, at said office. Subsequently I had my office rent reduced, and thereupon very properly notified them that their proportion would be reduced, which reduction was to $15." *Locke*, *Rec.* 84, *Ans.* 214; *Charles F. Thompson*, *Rec.* 123, *Ans.* 14.

That he made no demand, meantime, for payment of the royalty, is fully explained. He had an express contract with Lane upon which he chose to rely. Lane had not repudiated it in terms, but had given unmistakable indications that he would do so, if the subject was broached. So long as it was not repudiated, Locke believed it to be binding. But if once it was repudiated he knew that litigation would be inevitable, and must be immediate. His absence in the far west together with his inability, by reason of his poverty, to institute and prosecute the necessary suit, compelled him to forego an authoritative asser-

tion of his rights, until he was in a position to maintain them. *Locke*, *Rec.* 82, *X-Q.* 205, 206; 86, *Ans.* 2–5; 87, *Ans.* 6, 7.

"I had neither the time nor the means at my command to enforce such a course; therefore I preferred to leave the matter in abeyance, as I regarded the verbal agreement of April, 1875, as fully protecting my rights." *Rec.* 86, *Ans.* 5.

Such circumstances and conditions are a full exoneration from the charge of *estoppel*.

Next: In order to contradict Locke's statement that he conceived and perfected his idea by seeing the elevator at Bare, Shinkle & Howell's, it is assumed by defendant that Locke testified he had seen that work in progress in the summer of 1871. And thereupon evidence was offered to show that that work was not begun until late in the fall of that year.

As to which it is to be said in the first place, that Locke fixes no time when he went there. He says that in the summer of 1871, he was engaged in other work, which subsequently led up to the inspection of the proposed elevator. He says his visits to the work in company with Lane, were made while the hoister was in course of erection, without attempting to say when that was. *Locke, Rec.* 25. He went for the purpose of seeing the principle of the machine, and paid no attention to its erection. *Locke*, *Rec.* 54. *Ans. X-Q.* 18, 20, 21, 22, and was unable to state whether or not any parts of the elevator were in place or on the ground. *Rec.* 21, *Ans.* 26.

And in the second place: the order was taken October 28, 1871, and when the time book of the workmen in the pattern shop, which would have given definite information as to the disputed date, was finally produced upon

the demand of complainant, it was found that the leaves covering the dates in question had been all torn out. *Rec.* 143, *Ans. X-Q.* 35; 149, *Ans.* 1, *Charles F. Thompson.*

Next: It is made a matter of defense within the well-known rule that Locke used the time and materials of Lane & Bodley in conceiving and preparing his invention. Locke says he did not.

"The device was complete as brought by me from my home, as previously stated in this deposition, modifications were attempted against my judgment, the experiments therewith demonstrating the necessity of return to the original plans, which was done." *Locke, Rec.* 40, *Ans.* 17.

There is no testimony whatever offered by the defendant to contradict this. Upon the contrary, the testimony is concurrent that Locke's time was given to the concern exclusively under Lane's instructions, and the materials used were for the experiments heretofore detailed. Those experiments were not in aid of the invention, but in derogation of it, at Lane's command, and were failures.

Title to the Patent.

The defendant in various ways heretofore, by pleadings filed, and testimony taken, and now by the brief of counsel has made claim of title to this patent. The character and extent of the title asserted has not always been the same. It has varied from the claim of an express agreement for an assignment to a right to an assignment through an established custom, and now, in the brief of counsel, to an equitable right or an implied license.

The claim was first made in this way.

The answer of the defendant to the bill was filed upon January 24, 1885. *Rec.* 6. The complainant filed his openings deposition in June following. *Locke, Rec.* 10.

Upon January 15, 1886, the defendant took the deposition of P. P. Lane, *Rec.* 92, and thereafter of the alleged expert, Stanwood, *Rec.* 104, and the son-in-law, Chas. F. Thompson, *Rec.* 121, ending January 27, *Rec.* 131. These depositions at that time presumably covered the whole case of the defendant. Whatever rights existed had been or could have been fully ascertained at that time. All sources of information were open and there was no lack of zealous partisans to investigate them. Up to that period there had been no claim of an agreement with Locke of any sort relating to an assignment of his patent. If there had been such an agreement Lane and Thompson must have known it long before.

But on February 2, 1886, about a week after apparently closing the case, the defendant filed an amended answer, *Rec.* 15, in which it was averred that

"as part of the contract of employment made by and between its predecessors, the firm of Lane & Bodley, and the complainant Locke, it was understood and agreed that all improvements in the line of their manufacture which might be made by said Locke during the period of the employment of said Locke by said firm and deemed by said firm patentable should be assigned to said firm and complainant jointly; and that such agreement was in force, unrevoked, at the date of said Locke's alleged invention, with the further agreement that said firm should have the right or option of the exclusive title and ownership of such patents as might be taken upon such inventions by paying an agreed price therefor or a price fixed by arbitration." *Rec.* 15.

Secretary Chas. F. Thompson verified this answer. Now how was it afterward supported? It was proven there was no such contract. Lane had testified in his deposi-

tion taken in January, *before the amendment was filed*, that there was no such contract. He said:

"Q. 27. What, if any, contract did you have with Colonel Locke during the period of his employment in respect to patents or patentable inventions?"

"A. *I never considered that we had any contract*, any more than Locke had spoken to me about some great invention which he thought he would bring out in connection with hydraulic elevators for the economizing of the use of water."

. . . . . .

"On the 28th of October, 1872, I wrote Colonel Locke a letter, in reply to several verbal requests that he had made in regard to these inventions which were expecting to be brought out, *and without reference to any thing that had passed; and I wish it to be distinctly understood that any reference which is stated here about patent allowances was the prospect of future development, and not any thing which had passed.*" (Italicized by counsel.) *Lane, Rec.* 100, *Ans.* 27.

And Thompson in his deposition, taken in January, *before he had verified the answer*, had testified there was no such contract.

"A. The general custom and rule was then, and is now, that all inventions or improvements made by the designing corps of a manufacturing establishment is the property of the establishment, and the patents are assigned by the inventor without additional consideration."

"Q. 23. Was Colonel Locke's employment by the firm of Lane & Bodley, 1871, based upon any other or different understanding than the custom which you have stated?"

"A. *Not at first*, but, I believe, *subsequently* some understanding was had *in reference to improvements he might make.* This is the first, and, I believe, the only exception to the rule ever made by the company or firm. Said understanding is fully set forth in the communication dated October

28, 1873, and marked Exhibit 8, and heretofore referred to." (Italicized by counsel.) *Chas. F. Thompson, Rec.* 125, 126.

This letter of October 28, 1873, is the same letter referred to by Lane as the letter of October 28, 1872 (*Rec.* 41, *Exhibit* 8), and was written *after the valve* had been in constant use for more than a year. The fact about it was, and and the only fact, that Locke had then invented a drum device, and Lane & Bodley desired to acquire an interest in the patent. *Locke, Rec.* 41, *Ans.* 18, 19.

Inasmuch therefore as the letter was written two years *after* his engagement, it could not have been "part of the contract of employment," as averred in the amended answer; and as to the custom proclaimed by Thompson, it is not even alluded to in the pleadings or in the evidence.

When considering the conflicting declarations of the witnesses in the case, the recklessness of verification displayed in this instance, become of great significance.

In line with this the testimony of Lane in another vital matter may be cited.

It has already been said that the defendant claims the Locke valve to be simply the Rankine valve, so called in the record, because a valve (the Junker valve) is shown in the work of Professor Rankine. In order to strengthen this claim it was testified by Lane that a copy of Rankine's book, which was offered in evidence, had been in the drawing-room of Lane & Bodley for a long time preceding Locke's engagement; that it was well known to all of them and to Locke, and that the valve was copied by him bodily from the book and adapted, with some slight changes, and even these were suggested by Lane himself.

After giving his version of the preliminary failures, Lane said as to this:

"We then turned our attention to other forms of

valves, and gave especial attention to a form that was represented in Rankine's mechanical work, and had been used in Europe for a long time, and said to operate very satisfactorily." *Lane, Rec.* 94.

The book was offered in evidence, and the wood-cut showing a valve on page 140 was shown him. He said that was the valve which they considered (*Lane, Rec.* 97, *Ans.* 16), and they had a cut of it on their table at the time, and it was known to Locke and himself and others about the establishment. *Lane, Rec.* 152, *Ans.* 14. That then was in 1871. But when Locke saw the book he instantly recognized it as one bought by him for them November 2, 1872. *Locke, Rec.* 45, *Ans.* 28. Once more then Lane was mistaken. That was not the identical copy, and he admits it. *Lane, Rec.* 153, *Ans.* 16.

But then he shifts again, and says the book was a very common book, to be found in all libraries, and the copy they had in their drawing-room belonged to Charles A. Bauer, a draughtsman in their employment who preceded Locke, and Thompson says he was familiar with the book as it was generally to be found lying on Bauer's table. *Thompson, Rec.* 133, *Ans.* 7.

Mr. Thompson, however, adds in the same answer, that Bauer left before Locke came, and took his book away with him. Consequently the claims of the defendant in this regard, are refuted by themselves. Locke says, *Rec.* 46, *Ans.* 28, he never saw a copy at Lane & Bodley's other than that he purchased for them, and further that he had no knowledge of Rankin when he made his invention, nor until he bought the book. *Rec.* 57, *X-Ans.* 49, 50, 51, 52. Of a piece with this, too, was Lane's reiterated declaration that during the entire time of Locke's employment, there

were many draftsmen in the drawing-room, all of whom were familiar with the experiments.

"We had several draftsmen in the room." *Lane, Rec.* 98, *Ans.* 18.

"We had, I think, two other draftsmen there at the same time. I am sure we had two others who were employees of our concern." *Lane, Rec.* 98, *Ans.* 21.

It was afterward conclusively shown by Thompson, Stanwood, and Locke, that no other draftsmen were there at that time, as the only other draftsmen employed whilst Locke was there was Watkins, Stanwood, and Bauer, and they were not there until after the valve was in actual use. "A. E. Watkins, November 16, 1872, to October 15, 1873. C. A. Bauer, October 28, 1873, to May 15, 1875." *Thompson, Rec.* 131, *Ans.* 33; *Stanwood, Rec.* 111, *Ans.* 25; *Rec.* 118, *Ans.* 78; *Locke, Rec.* 42, *Ans.* 21; *Rec.* 45, *Ans.* 27.

The Alleged Anticipations.

The anticipation relied upon is the Rankine device. The other references are not seriously considered even by the defendant. The first inquiry which suggests itself is, why the defendant, being as is claimed, so familiar with that device, and knowing it to be so easily fitted for the purpose, did not adopt it before employing Locke. And further, after having employed him, and the experiments having failed, why the Rankine device was not then instantly taken without being held in abeyance as a last resort. The Rankine device is an engine designed by Junker, and for convenience of the court the complainant has prepared enlarged photographs of the devices, with the text of Rankine, describing it. *Complainant's Exhibit No.* 4.

A brief statement of what the Locke device is, will

make subsequent comparisons of these exhibits more comprehensible.

The patent states that his improvements relate wholly to the cock or valve proper, and that he lays no claim to graduated valve openings broadly, nor to any specific form thereof, apart from his special combination with soft or yielding packing without contact with the graduating device. There are three claims, covering this special combination.

The invention is designed to enable any unskilled operator to control the flow of the water in hydraulic elevators, so that the platform may be stopped accurately at any desired point, and so that the sudden stoppage of the water shall not create water ram and burst the pipes, or its equally sudden resumption give abrupt motion to the platform. This object is accomplished by means of the valve alone. No other part of the machinery has any part in it. And in order that the valve may do this, the supply and discharge of the water must be graduated in such way that it shall begin with a threadlike stream, continuously but imperceptibly increasing, until the whole volume has been admitted. This is effected by scallops or indentations making graduated openings, one set of which forms the lower end of a piston, and the other forms a terminus of a pipe in which the piston moves. This pipe is furnished at either end with packing of leather or rubber, as is the piston, all so arranged that they are not brought in contact, and therefore can not become worn or mutilated, as does all other such packing.

The whole value of the valve lies in the features of the graduated openings, the durability of the packing, and in being so perfectly tight that it will not leak.

Further, the valve is an integral part of the device

which it operates, and is in no sense separate from it, nor is it an auxiliary machine.

The Junker device is the opposite of all this. It is a "water pressure engine," and is described by Rankine as such, *p.* 138. The distributing valves of such engines are "generally worked by a small auxiliary water pressure engine," *p.* 139. "The most advantageous use to which they can be put is the pumping of water," *p.* 139, and accordingly the Junker device was designed for, and was "a mine pumping engine," *p.* 140, *i. e.*, to pump water out of a mine to keep it from drowning. This fact at once implies that such an engine was never designed to meet the conditions required for the movement of the modern passenger elevator. It required to have regulating cocks in the supply and discharge pipes. *P.* 143.

It had no packing, it was not tight, and was not therefore susceptible of accuracy of movement, in the sense in which we are now speaking.

And yet this is the device which Lane claims was at hand in his shop ready for his needs, and only requiring the merest bench changes to become available and successful.

The device has an arrangement for graduated openings, consisting of slots in the valve, and many as are the contradictions between Locke and Lane, none are so directly at variance as that concerning this slotted valve.

According to Lane's testimony Locke said it was not necessary to have this feature in his, *i. e.*, the Locke valve, and proposed to substitute a conical end to the piston, which was accordingly done, but when the valve with this change was put into use there was a return of the old water-ram trouble, nearly as severe as at first. Therefore Lane discarded the conical end, and, he says, made another

change himself. This consisted in giving a diamond shaped form to the end of the slot, and by virtue of his authority as the head of the firm he peremptorily commanded Locke to adopt it. He thinks he went so far as to make the change in pencil mark upon the drawing. *Exhibit* 4, *Lane*, *Rec.* 94.

Upon the strength of which the change was made and all was well.

But Locke, *Rec.* 48, *Ans.* 35, 37, not only denies this, but, *Rec.* 29, shows that Lane objected to all serrated forms, because they would infringe the "Judson Governor" patent. Notwithstanding which, after the failure of the experiments without them, the serrated graduation as now shown in the Locke patent, and as then shown in the original drawings of the device, were restored of necessity, and when that change was made, and not until then, all was well. *Rec.* 67, *Ans.* 110.

Locke makes full explanation of the Rankine device. *Rec.* 31, 32, 33, 36, 37, 38, 50, 87.

James B. Stanwood, an engineer in the employment of the defendant was called as an expert. He had prepared a dissertation upon valves, which he read and also submitted some drawings with it. *Rec.* 105, sheet No. 1, Stanwood sketch, Figs. 1, 2, 3, 4. The purpose of calling him, of course, was to prove that Locke, Rankine, Dunlap and Vaughan were the same, particularly Rankine. He thought there was nothing new in Locke, unless it might be the rearrangement of the parts found in the others, which came pretty near admitting Locke's three claims. He admitted, *Rec.* 112, *Ans.* 34, 35, that Rankine had no cup packing to the valves, and that ordinary cup packing was liable to be impaired, and to permit leakage by the attrition of foreign substances in the water. But with

cup packing added, and sufficient "lap" to the valve (*i. e.*, sufficient length of valve to cover the valve opening, *Rec.* 107). Rankine was Locke and Locke was Rankine. To demonstrate which, in his sketch marked Stanwood exhibit No. 2, he showed Rankine with those additions, having placed the packing in the only manner which the mechanism would permit, and thereupon he said that beyond all question the two were identical.

But subsequently a ludicrous thing occurred. The complainant called Theodore J. McGowan, *Rec.* 88, a man who for "thirty-five years had had experience in cylinders of pumps and for valves and passing over holes which were perforated through the cylinders." He was shown the Stanwood sketch, No. 2, and showed that Stanwood *had placed the upper packing upside down*. And that, *per consequence*, instead of keeping the valve tight, by keeping the water out, its inevitable result was to let the water in. *McGowan*, *Rec.* 90, *Ans.* 7; *Locke*, *Rec.* 37, *Ans.* 12.

That put a quietus on the identity of Rankine with Locke, but it was not Stanwood's fault. It was in the machine, and he could not help it. By a singular omission, this "Stanwood Sketch No. 2" does not appear in the "Documentary Exhibits" filed by the appellant. Why?

McGowan then (*Ans.* 5) sustained the Locke device, and showed that his arrangement of the packing was novel and valuable, and obviated prior existing conditions of wear and tear. In corroboration of which he furnished a pencil sketch (Exhibit McGowan, sketch No. 1, *Rec.* 89), showing the result upon leather packing subjected to such wear and tear. And, moreover, he adds, that the illustrations of such wear and tear, shown in the article entitled "Cup Leathers," *p.* 176, in the monthly journal "Mechanics" (*Locke Exhibit No.* 1, *Rec.* 35), are such as he had previously found in his experience. *Rec.* 89, *Ans.* 6.

It is unnecessary to consume any time in discussing the Dunlap device. It is simply a reproduction of the ordinary piston valve described in Rankine's work, *paragraph* 121, *p.* 125.

The Darlington engine, built for the Alport mines in Derbyshire, described in Weisbach's work, and referred to by Rankine, is the exact counterpart of Dunlap. The packing in this valve is subject to all the wear and tear just described, because it passes over a graduated device or opening. *Locke, Rec.* 34, *Ans.* 10.

The Vaughan patent was not applied for until July 31, 1873, which was long after the Locke valve had gone into general use.

Locke gives a comprehensive explanation of the differences between himself and Vaughan. *Locke, Rec.* 34, 35.

The Blotters.

In order that it should be entirely manifest that Locke did not conceive his valve, as he claimed, and that he did not make his sketches at home, as he asserted, the defendant put in evidence sundry sheets of paper, which were called blotters, and marked *Exhibits Nos.* 7½ *to* 18, *Chas. F. Thompson's Rec.* 135.

Thompson, 135, and Lane, *Rec.* 151, *Ans.* 9, testified that the drawings thereon represented the development and progress of the Locke valve, and were made by Locke in their drawing room, under Lane's direction, for the firm. Or, as Thompson put it, "They represent the discussion of the devices from mathematical and diagramatical standpoints." . . . "They were made as verbal discussion proceeded." . . . "The collection is of very great value, as one may readily suppose." *Rec.* 137, *Ans.* 16. But yet, great as was their value, he "never knew they existed," until making two searches upon the urgent re-

quest of Locke for other papers, "they were found, evidently stored away in an unused corner, and very dirty when I got hold of them." *Rec.* 139, *Ans.* 3.

He said, further: "It has been the custom of the firm to preserve all sketches produced in the drawing room." *Rec.* 137, *Ans.* 16.

But their expert, Stanwood, *Rec.* 112, *Ans.* 29, said that as to the years 1872, 1873, there was no system at all about the matter at that time, and they only catalogued and arranged their drawings since "four years back," to wit, 1882.

Locke dispels all idea of their importance by explaining what they really were.

"A. 2. They were simply paper for the purpose of scratching down any thing that one might have under consideration, either in the way of drawing or designing figures, or in descriptions, etc. They were used in accordance with my common and previous habit. They were used at my own instance." *Rec.* 17, *Ans.* 2.

He asserts that there is no reliance to be placed upon them chronologically, and further, that—

"In using the blotters, whatever was convenient at hand was picked up and used, and in many cases drawings and sketches were superimposed upon matter already on the paper, and private matters frequently placed on the blotters, and they were used also in explaining or illustrating foreign matter. In fact the blotters were simply 'blotters,' in the broadest sense of the word." *Rec.* 18, *Ans.* 7.

He then proceeds, beginning with *Ans.* 11, *Rec.* 18, to explain each in its order, and to show that neither pertains to the matter alleged.

The quotations already made from the testimony I think are sufficient to justify my opening declaration that the statement of "General Facts" in the brief for the

appellant is misleading in its whole scope and assertion. No effort has been made to follow these assertions one by one, and to contradict them singly would be too voluminous for the patience of the court. One example will serve to indicate their character. It is this:

"The facts clearly established are that the valve was produced in the drawing room of the Lane & Bodley Company, and was the outgrowth of joint experience.

"This is found as a fact by the court below, who says: "After many trials and failures the construction patented to complainant was hit upon, and it alone was satisfactory."

"This it seems to me practically settles all the ground work of fact upon which the rights of the firm arise." *Appellants' Brief*, 12.

The truth is that the court found as follows:

"*The evidence does not sustain the claim that the invention was not the sole production of the complainant, but the joint production of himself and P. P. Lane, senior member of the firm of Lane & Bodley.*" . . . Locke denies all these statements" (*i. e.* that Lane made changes and suggestions, and put the pencil marks upon the drawings), "and testifies that he devised his improvement before the time of his engagement as draughtsman with Lane & Bodley. *Without entering upon the details of the testimony it is sufficient to say that the court finds the fact to be that the invention was made by the complainant.*" *Rec.* 161. (Italicized by counsel.)

And the retort may be made that this is the finding which settles all the groundwork of fact upon which the rights of Locke arise.

I can not resist giving another example:

"In the very act of such solicitation and representation he was filing a secret mortgage upon the talent he

engaged to sell to them, clear and free from all incumbrances, a mortgage to himself covering the identical thing he engaged to assist them in producing." *Appellant's Brief*, 16.

The similitude is bad in its law. To file a mortgage is to make it public, and when a mortgage is once filed it can not be a secret, but is notice to all the world of its existence. Again. Only he who holds the title can incumber it by a mortgage, and the mortgage must be to another. He can not make and file a mortgage to himself. And it is equally bad in its facts. The fact was that Locke invented it prior to his engagement; constantly notified Lane of its existence; Lane's whole effort was to avoid being driven to adopt it, and finally he was compelled to take it. And such was the finding of the court.

The Law of the Case.

The case rests so exclusively upon the facts that a finding of them will dispense with any labored examination of the law. Indeed, there can not be, under any circumstances, either upon one finding or another, any principle of law involved, which is not wholly elementary and familiar. Instead of citation of authorities, therefore, I prefer to offer a few propositions of fact which carry the law with them.

1. The case is not within the well-known rule of *McClurg* v. *Kingsland*.

2. As against the Lane & Bodley corporation the case is entirely within *Hapgood* v. *Hewitt*. The corporation was not formed until all these controlling events had happened, and no subsequent *ex parte* agreement between the incorporators could affect Locke.

3. As against the Lane & Bodley partnership, Locke

is not *estopped*. He had an express contract for the payment of royalty and rested upon it. No equitable estoppel operates against that. If suit had been brought at law to recover upon the contract, and the statute of limitations had been pleaded, considerations might have arisen which do not arise here. But even if statutory limitation could have been invoked in such a case, equitable estoppel could not have been. And assuredly he is not *estopped* against the Lane & Bodley corporation for the reasons just stated.

In this connection, another statement in appellant's brief must be contradicted. It is the statement that at the hearing below no significance was claimed for Schneir's testimony as to the royalty and the notice. This is most surprising to me, remembering as I do, the heat of argument between counsel which the discussion of that evidence elicited.

4. Locke is not barred by *laches* toward the Lane & Bodley parnership. Even if he had not rightfully rested upon the express contract, the circumstances of his poverty and his absence would excuse any delay as to them.

5. Neither is he barred by any *laches* toward the Lane & Bodley corporation. They were infringers *ab initio*, and he owed them no duty of diligence.

6. The defendant having claimed title to this patent, having manufactured it under such claim, having held it out to the public as new and useful, is now *estopped* from denying its usefulness or novelty as against the patentee.

7. The adoption of the valve at once, and its general use, is evidence of the originality of the invention.

8. Strong, clear and convincing proof is always required to overcome the presumptions arising from the grant of the patent.

THE MASTER'S REPORT.

If there is any error in the finding of the Master, it is to the prejudice of the complainant in not awarding the contract price, viz., $25, as royalty, which would have amounted to $5,525, instead of the sum of $3,860, as found to be due.

But the complainant waives that here, as he did in the court below. The report is so explicit, and so entirely within the rules of computation under the peculiar conditions of the case, that it might appear as an implied admission of error to discuss it.

It proceeds entirely upon the rules laid down in *Loom Co.* v. *Higgins*, 48 O. G. 1121, which in turn follows the principles stated in the *same case*, 105 U. S. 580.

In conclusion, there remains to be said only what has been as justly said in many previous cases.

The defendants have used the device. It has become popular. It has spread their reputation. It has brought them into prominence. They have made large profits out of it.

And when the inventor asks for an accounting they deny him. They ridicule him. They belittle his invention. They plead trifling defenses. They endeavor to wear him out by prolonged and expensive litigation.

It's an old story, I know. But like that other oft told story—it's as true now as the day when first it was told.

THOMAS A. LOGAN,
For Joseph M. Locke.